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SOIL SURVEY

Montgomery County Alabama

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES
and
ALABAMA AGRICULTURAL EXPERIMENT STATION

HOW TO USE THE SOIL SURVEY REPORT

THIS SURVEY of Montgomery County will serve several groups of readers. It will help farmers in planning the kind of management that will protect their soils and provide good yields; assist engineers in selecting sites for roads, buildings, ponds, and other structures; and add to the soil scientist's fund of knowledge.

In making this survey soil scientists walked over the land. They dug holes and examined surface soils and subsoils; measured slopes with a hand level; noticed differences in the growth of crops, weeds, and brush; and, in fact, recorded all the things about the soils that they believed might affect suitability for farming, engineering, forestry, and related uses.

The soil scientists plotted the boundaries of the soils on aerial photographs. Then, cartographers prepared from the photographs the detailed soil map in the back of the report. Fields, woods, roads, and many other landmarks can be seen on the map.

Locating the soils

Use the index to map sheets to locate areas on the large map. The index is a map of the county on which numbered rectangles have been drawn to show where each sheet of the large map is located. When the correct sheet of the large map is found, it will be seen that boundaries of the soils are outlined and that there is a symbol for each kind of soil, wherever it appears on the map. Suppose, for example, an area located on the map has the symbol Sm32. The legend for the detailed map shows that this symbol identifies Sumter clay, eroded nearly level phase. This soil and all others mapped in the county are described in the subsection, Descriptions of Soils.

Finding information

Few readers will be interested in all of the report, for it has special sections for different groups. The section, General Nature of the Area, which discusses early history, climate, water supply, and other subjects, will be of interest mainly to those not familiar with the county.

Farmers and those who work with farmers can learn about the soils in the subsection, Descriptions of Soils, and then go to the section, Use and Management of Soils. In this way they first identify the soils on their farms and then learn how these soils can be managed and what yields can be expected. The soils are grouped by capability units; that is, groups of soils that need similar management and respond in about the same way. For example, Sumter clay, eroded nearly level phase, is shown to be in capability unit A6–IIe–1. The management needed for this soil, therefore, will be found under the heading, Capability Unit A6–IIe–1, in the section, Use and Management of Soils.

Soil scientists will find information about how the soils were formed and how they are classified in the section, Genesis, Morphology, and Classification of Soils.

Engineers will find information that will assist them in the section, Engineering Properties of Soils.

Foresters can use the subsection, Woodland Management.

Students, teachers, and other users will find information about the soils and their management in various parts of the report, depending on their particular interest. Those interested in general soil areas will want to read the section, General Soil Map. This section tells briefly about the principal patterns of soils, where each is located, and how they differ from each other.

This soil survey was made as a part of the technical assistance furnished by the Soil Conservation Service to the Central Alabama Soil Conservation District. Help in farm planning can be obtained from the staff of the Soil Conservation Service assisting the district, the county agricultural extension staff, or the State Agricultural Experiment Station. Fieldwork for the survey was completed in 1957. Unless otherwise indicated, all statements in the report refer to conditions in the county at the time the fieldwork was in progress.

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SOIL SURVEY OF MONTGOMERY COUNTY, ALABAMA

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UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES AND THE ALABAMA AGRICULTURAL EXPERIMENT STATION

MONTGOMERY COUNTY is in the south-central part of Alabama in the northern part of the Coastal Plain (fig. 1). The county is about 37 miles from north to south and about 33 miles from east to west. Its total area is 790 square miles, or 505,600 acres. Montgomery, the county seat, is in the northern part of the county. Although agriculture is important, the cultivated acreage in the county has decreased in recent years. This decrease in acreage is most apparent in the smaller acreage planted to cotton and corn. The acreage in pasture has increased. Industrial and other employment in the city of Montgomery has greatly increased in recent years.

General Nature of the Area

This section was prepared for those not familiar with Montgomery County. Discussed are history, physiography, climate, and other subjects of general interest.

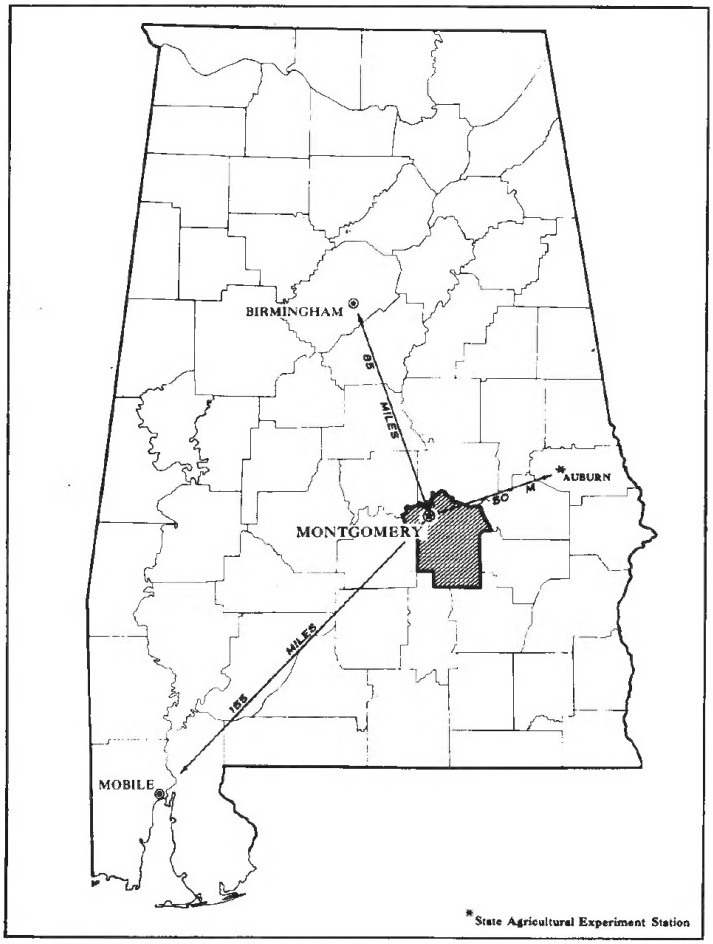

Figure 1.—**Location of Montgomery County in Alabama.**

Early History, Development, and Population

Montgomery County was created in 1816 by an act of the legislature of the Mississippi Territory. Its size was greatly reduced after Alabama became a State and parts of Elmore, Bullock, and Crenshaw Counties were formed from the original area of Montgomery County.

Before Montgomery County was organized, white settlers came to the site of the city of Montgomery, where they set up a trading post. The surrounding area was fertile and accessible by the Alabama River. Development of the county was fairly rapid. By 1821, Montgomery had about 45,000 people, and by 1835 it was the largest city in Alabama. It became the capital of the State in 1846.

The surrounding area developed along with the city of Montgomery. In 1930, the population of Montgomery County was 98,671, and that of Montgomery City was 66,079. Between 1930 and 1950, the population of the county increased to 138,965—a gain of about 40 percent. In the same period, the population of Montgomery City increased to 106,525—a gain of about 60 percent.

Physiography, Relief, and Drainage

Montgomery County is in the northern part of the Coastal Plain. It has five physiographic subdivisions that range from the flood plains along the large streams in the northern part of the county to the rough, hilly land in the southern part. These subdivisions are shown in figure 2.

The flood plains and low stream terraces occur north of Montgomery along the Alabama and Tallapoosa Rivers and south and southwest of Montgomery along Catoma Creek and its tributaries. The relief of this area is mainly level to very gently sloping.

The red, high stream terraces are in a belt that extends eastward from a point about 4 miles west of Montgomery almost to Macon County. The relief of this belt is somewhat broken in the vicinity of Montgomery, but it is more nearly level farther east.

The prairie land, or black belt, is a wide belt that crosses the county from east to west (fig. 3). Its northern boundary is just south of Montgomery, and its southern boundary extends through Le Grand and Downing. This belt is as much as 15 miles wide in places; but it is much narrower in the central part, where the flood plains and low terraces along Catoma Creek extend southward. The northern part of the prairie land is very gently sloping to sloping and contains most of the acreage in calcareous soils in the county. The southern part is somewhat higher and more rolling than the northern part. It is called red prairie land or post-oak prairie land.

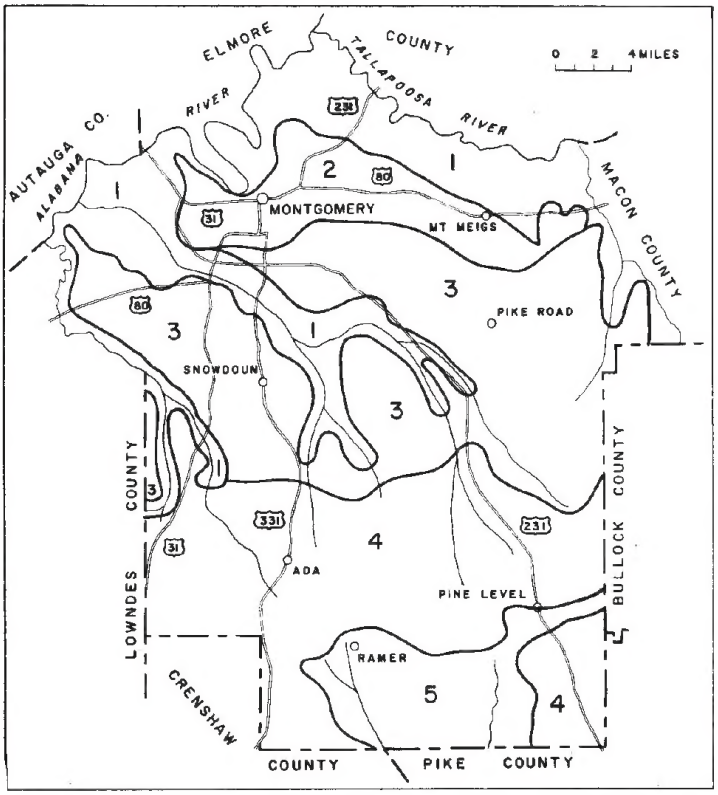

***Figure 2.*—Physiographic subdivisions in Montgomery County: (1) Flood plains and low stream terraces; (2) red, high stream terraces; (3) prairie land or black belt; (4) rough, hilly land; and (5) gray sandy land.**

The fourth subdivision consists of rough, hilly land and is sometimes called strata ridge. This ridge is a continuation of Chunnenuggee Ridge in Bullock County. It has sharp breaks in slopes and many gullies. The ridge borders the prairie land and separates the heads of streams that flow northward from those that flow southward. The streams flowing northward have cut farther into the ridge than those flowing southward. They have dissected the ridge enough to cause local differences in elevations that range from 75 to 150 feet.

The fifth subdivision is made up of the gray, sandy land in the south-central part of the county. This subdivision is less hilly than the rough, hilly land to the north. Part of it is gently sloping. Most of the cultivated part of the Coastal Plain that lies south of the prairie section is in this subdivision.

***Figure 3.*—Typical prairie landscape.**

Climate

Montgomery County, which is about 140 miles from the Gulf of Mexico, has a climate that is almost subtropical. Table 1 gives the average monthly, seasonal, and annual temperature and precipitation as recorded at the United States Weather Bureau Station at Montgomery, Ala.

The county is gently rolling, and topographic features do not cause many local variations. From June through September, the temperature and humidity are about the same and do not change much from day to day. December, January, and February are the coldest months and have frequent changes in temperature and humidity. These changes are from weather dominated by mild air that had been moistened and warmed by the sea to weather dominated by dry, cool continental air. Hard freezes are infrequent, and normally wild pasture grasses and weeds grow throughout the winter.

TABLE 1.—*Temperature and precipitation at Montgomery, Montgomery County, Alabama*

[Elevation, 195 feet]

Month	Temperature [1]			Precipitation [2]			
	Average	Absolute maximum	Absolute minimum	Average	Driest year (1954)	Wettest year (1929)	Average snowfall
	° F.	° F.	° F.	*Inches*	*Inches*	*Inches*	*Inches*
December	49. 4	83	8	4. 54	4. 03	3. 32	0. 2
January	49. 2	83	5	4. 60	. 72	4. 30	. 2
February	51. 6	84	−5	4. 73	3. 40	10. 34	. 2
Winter	50. 1	84	−5	13. 87	8. 15	17. 96	. 6
March	57. 1	90	20	6. 50	4. 67	15. 38	[3]
April	64. 7	92	30	4. 81	2. 06	7. 56	[3]
May	72. 5	99	43	3. 46	1. 48	7. 27	0
Spring	64. 8	99	20	14. 77	8. 21	30. 21	[3]
June	79. 6	106	48	4. 69	1. 55	4. 68	0
July	81. 2	107	61	5. 76	3. 38	3. 94	0
August	80. 9	104	58	4. 75	1. 68	. 82	0
Summer	80. 6	107	48	15. 20	6. 61	9. 44	0
September	77. 1	106	45	3. 51	. 44	5. 42	0
October	66. 4	100	26	2. 36	1. 56	3. 21	0
November	55. 2	86	13	3. 95	1. 85	12. 01	[3]
Fall	66. 2	106	13	9. 82	3. 85	20. 64	[3]
Year	65. 4	107	−5	53. 66	26. 82	78. 25	. 6

[1] Average temperature based on an 83-year record, through 1955; highest and lowest temperatures on an 86-year record, through 1958.

[2] Average precipitation based on an 83-year record, through 1955; wettest and driest years based on an 86-year record, in the period 1873–1958; snowfall based on an 86-year record, through 1958.

[3] Trace.

The average growing season, compiled for an 83-year period, is 250 days. March 8 is the average date of the last freezing temperature in winter, and November 13 is the average date of the earliest freezing temperature in fall.

Most rain that falls from late in April to early in June is in showers or thunderstorms that occur in advance of approaching cool waves. These cool waves become weaker and less frequent as summer approaches. Droughts occur in spring, late in summer, and early in fall.

Several years without snow may pass in Montgomery County. The heaviest snowfall recorded in a 24-hour period was on December 5, 1886, when there was 7.1 inches. The following day, 3.9 inches fell, and the 2-day total was 11 inches.

Crops grow best in Montgomery County when there is about 1 inch of rainfall per week during the growing season. Although the average rainfall is about 1 inch per week in the county, occasionally 2 or 3 weeks pass without an important rain. Droughts are not uncommon in May and June, but they usually occur late in summer and in fall. Although temperatures are favorable well into fall for the growth of plants, many crops cannot be grown without irrigation. At Montgomery, the longest period without measurable rain on record was the 55 days in 1904, from September 8 to November 2. In 1891, there was less than 0.1 inch from September 14 to November 8. Since evaporation is not rapid at low temperatures, the soil is seldom too dry in winter to supply the moisture that winter crops need. Droughts are most frequent in October and are next most frequent in May.

From late in June to the middle of August, nearly all precipitation is from local, mostly afternoon, thundershowers. The amount of rainfall in different parts of the Montgomery area, is likely to vary considerably from day to day. From June 1 to June 29, in 1941, it rained every day at the weather station. In this period, 7.99 inches of rainfall was recorded.

Late in summer, the local heat thundershowers give way to thundershowers that occur ahead of slight drops in temperature. The general rains that occasionally occur late in summer are related to the storms on the Gulf of Mexico.

The rains in October are nearly always showers or thundershowers preceding drops in temperature, which becomes more pronounced as winter approaches. From December through March or until early in April, the rains may be heavy or light, but the average precipitation is high. In this period, rivers overflow most frequently.

Winds are usually light. Strong winds generally last only a short time, and dangerous winds are rare. The only serious damage caused by a tornado in the city of Montgomery was on February 12, 1945.

Water Supply

In Montgomery County, wells furnish nearly all water for municipal and domestic use. Deep artesian wells supply the city of Montgomery. In the prairie region water is obtained from deep wells that have been drilled in the Selma Chalk. In the sandy areas, wells 20 to 50 feet deep usually supply water of good quality.

Montgomery County has many creeks and rivers that furnish water for industry, irrigation, livestock, or recreation. Large rivers have a total length of 62 miles and make up 951 acres; small rivers and large creeks have a total length of 64 miles and make up 156 acres. A report from the State Conservation Department, dated October 1, 1957, lists 1,627 fish ponds in the county. These ponds have a total area of 5,223 acres. There are also many small ponds that are used to water livestock.

In Montgomery County, ground water occurs under both unconfined (water table) and confined (artesian) conditions. The unconfined water is in alluvium and terrace deposits. It supplies many domestic wells and a few large municipal wells. The water-bearing sand, gravel, and porous limestone that underlie the soils in the county are sources of water that supply many of the municipal and industrial users as well as many private users.[1]

During the early development of the city, groundwater supplies around Montgomery were believed to be inexhaustible. The water level was lowered, however, and the flow from some wells ceased when more wells were drilled to supply the growing city. Some of the closely spaced wells had to be abandoned. By 1942, the water levels in some wells in the well field in the northern part of the city had fallen more than 100 feet below the land surface.

In 1943, a new well field was developed in the western part of Montgomery to ease the critical problem of water supply. By 1949, additional supplies were needed. Then the United States Geological Survey was requested to investigate the occurrence and availability of ground water. The tests made by that agency indicate that, with proper construction and spacing, many more wells having a capacity of 500 gallons per minute or more could be established in a westward extension of the west field. Several more wells have been established in recent years.

According to figures from pumping stations in Montgomery the average daily pumping is 11.8 million gallons in February and 19.1 million gallons per day in August. The water in the wells is usually at its lowest depth below land surface late in summer and early in fall.

Transportation and Industry

Montgomery County is well served by railroads, highways, and air lines. The county has six main railroads, five Federal highways, many state and county roads, and two air lines.

The six main railroads are the Gulf, Mobile and Ohio; Western Railway of Alabama; Louisville and Nashville; Seaboard Air Line; Central of Georgia; and the Atlantic Coast Line. All railroads enter the city of Montgomery. The Atlantic Coast Line runs southward through Snowdoun, Sprague, Ramer, and Grady, and the rest of the railroads serve the northern half of the county. All farms in the northern half of the county are within 5 miles of a railroad, and most farms in the

[1] POWELL, W. J., READE, H. L., AND SCOTT, J. C. INTERIM REPORT ON THE GEOLOGY AND GROUND-WATER RESOURCES OF MONTGOMERY, ALA., AND VICINITY. Geol. Survey Ala., Inf. ser. 3. U.S. Geol. Survey, 108 pp., illus. 1957. University, Ala.

southern half are within 10 to 12 miles of a station.

All parts of the county are accessible by public roads. U.S. Highway 31 runs north and south in the western part of the county and U.S. Highway 80 runs east and west across the northern half of the county. U.S. Highway 231 runs from the southeast corner of the county northwestward to Montgomery and then northward into Elmore County. U.S. Highway 82 runs southeast to northwest, and U.S. Highway 331 runs north and south. In addition to these Federal highways there are several hard-surfaced State and county roads. Most of the other roads in the county are graded and graveled.

Two air lines, Eastern and Delta, have several daily flights in and out of Montgomery. The Dannelly Field Municipal Airport is about 8 miles southwest of Montgomery on U.S. Highway 80. Maxwell Air Force Base, at the western edge of Montgomery, and Gunter Field, at the northeastern edge of the city, are military airbases in the county.

In recent years, Montgomery has shown a rapid increase in manufacturing. According to an estimate in December 1957, by the Alabama State Employment Service, 7,000 people worked in manufacturing plants in Montgomery County. This estimate showed a total employment of 62,425 in the county. Of this number, 5,000 were agricultural employees. There were 219 manufacturing firms in the county on January 1, 1958. Some of the products manufactured in Montgomery County are fertilizers, glass and glass products, car axles, showcases, refrigerator units, railroad equipment, steel tanks, brick and concrete products, candy and food products, furniture, and textile products.

Cultural Facilities

The educational facilities in Montgomery County include three colleges in Montgomery City. These are Huntington College, Montgomery Bible College, and Alabama State College for Negroes. A branch of the University of Alabama is also in Montgomery, and there are several privately owned business colleges in the city. The county has several high schools and many junior high and elementary schools.

Almost all denominations have churches in Montgomery, and many churches are located in the small towns and rural areas of the county.

There are six radio stations, two television stations, two daily newspapers and one weekly newspaper in the county. Rural mail delivery is accessible to all residents.

Agriculture

Before the white settler arrived, the Indians practiced a crude form of agriculture, mainly along the large rivers and creeks in the northern part of the county. The principal crops were corn, beans, pumpkins, and melons.

A few Scotch and English traders settled in the county around 1765, and other white settlers arrived in large numbers from about 1814 to 1820. These settlers cleared and farmed the soils first in the prairie section and on the sandy terraces. They produced food crops for themselves and their livestock. The principal crops were corn, oats, wheat, hay, and vegetables. Some rice and tobacco were also grown. Most farms were practically self-sustaining; the farmers produced their own pork, beef, and mutton. Cotton was the principal cash crop. It was ginned and baled and then hauled to the river landings, where it was shipped to markets to be sold or exchanged for supplies. The early farmer did not use commercial fertilizers; he opened new fields when old ones became unproductive.

By 1850, cotton production in Alabama was centered around Montgomery. This community had great agricultural wealth, but prosperity was temporarily halted by the Civil War. Farming was hampered after the war by economic conditions, but the recovery of the county was comparatively rapid.

By the end of the Civil War, much cropland was idle. A tenant system of farming gradually developed. Because the Negro tenants knew more about cotton and corn than about most other crops, cotton and corn increased in importance and other crops declined. The productivity of the upland soils gradually declined because cotton was grown year after year and sod crops were not used to control erosion. Later, commercial fertilizer was applied and more legumes were planted. In recent years, dairy products, beef, pork, corn, small grains, and hay have been produced for market. Cotton, however, is still important.

Crops and Pasture

The acreage of the principal crops grown in Montgomery County in stated years is given in table 2.

From 1909 until about 1933, the boll weevil caused a great decrease in the acreage planted to cotton. The greatest decrease was on the fine-textured soils. This was because, on these soils, cotton has rank growth and matures late. The boll weevil thrives on this kind of cotton. After 1933, the decline in the acreage of cotton was mainly a result of acreage control.

TABLE 2.—*Acreage of principal crops for stated years*

Crop	1929	1930	1949	1954
	Acres	*Acres*	*Acres*	*Acres*
Cotton harvested	55, 519	27, 616	21, 547	13, 727
Oats threshed or combined	1, 098	4, 474	2, 295	7, 029
Hay for all purposes	19, 192	18, 768	25, 805	21, 735
Peanuts for all purposes	1, 548	6, 295	2, 188	1, 244
Corn for all purposes	39, 017	54, 875	28, 558	18, 602

In the last 40 years, the type of farming in Montgomery County has been almost completely reversed. Formerly cotton and corn were the main cash crops, but now dairy products and beef are the main sources of farm income. Particularly in the past 15 years, the acreage in corn has decreased sharply and the acreage in hay and pasture has increased sharply. The acreage in oats has fluctuated.

The acreage in wheat has increased slightly in recent years, but the production of alfalfa for hay has almost ceased. There is, however, a fairly large acreage in the county that is very well suited to alfalfa.

Except for pecan orchards, commercial orchards in the county are small. A wide variety of vegetables is grown on a fairly large acreage. The vegetables are grown mostly for home use, and the surplus is sold at local markets.

The increase in pasture during the past 20 years has been in acreage and in quality. The quality of the pasture has been improved by adding phosphate and lime to the soil, by improving seedbed preparation, and by selecting plants suitable for the soil. In addition, the maintenance of the pasture has been improved by mowing or poisoning undesirable plants, controlling grazing, and continuing additions of fertilizer.

Livestock and Livestock Products

Table 3 gives the number of livestock in the county in stated years. During the past 10 to 15 years, the number of cattle raised for beef has greatly increased, but the number of milk cows has not changed greatly. The quality of the beef cattle and the dairy cattle has been constantly improved. More than one-half of the total value of all farm products is derived from the sale of beef cattle and milk.

TABLE 3.—*Number of livestock on farms in stated years*

Livestock	1930	1940	1950	1954
Horses and colts	1, 549	[1] 1, 747	2, 596	2, 065
Mules and mule colts	4, 861	[1] 4, 369	2, 834	1, 819
Cattle and calves	34, 655	[1] 49, 251	84, 959	91, 243
Milk cows	10, 200	12, 420	15, 272	12, 671
Swine	13, 860	[2] 15, 083	11, 431	7, 334
Sheep and lambs	2, 478	[3] 313	444	1, 680
Chickens	[1] 91, 662	[2] 96, 135	[2] 73, 697	[2] 67, 048
Chickens, sold	72, 906	48, 964	165, 915	448, 086
Turkeys, raised	14, 458	8, 392	6, 429	13, 441

[1] Over 3 months old.
[2] Over 4 months old.
[3] Over 6 months old.

Montgomery is one of the leading livestock markets in the South. It is served by two large stockyards. Through these stockyards, 263,723 cattle and calves, 35,695 hogs, and 6,595 sheep and lambs were sold in 1957. A considerable part of this livestock was raised in Montgomery County.

Four large plants process milk in Montgomery County. Farmers in the county sold these plants 4,634,273 gallons of milk in 1954, and farmers in adjoining counties sold several million gallons. Montgomery is also a leading market for hens, broilers, eggs, and other dairy products.

Tenure and Size of Farms

For the past 30 years, as the type of farming changed from row crop to hay and pasture, the proportion of tenant farms to owner-operated farms has decreased. The proportion of tenant farms in the county decreased from 48.2 percent in 1950 to 44.8 percent in 1954.

In this period of change in type of farming, the number of farms in the county has decreased and the average size of farm has increased. In 1945, the 3,076 farms in the county averaged 144.7 acres in size; in 1950, the 2,955 farms averaged 168.2 acres; and in 1954, the 2,391 farms, averaged 205.8 acres.

Farm Equipment and Home Facilities

Farm equipment and home facilities have increased in Montgomery County in recent years. From 1950 to 1954, the number of tractors on farms increased from 599 to 811 and the number of grain combines increased from 124 to 153. In the same period, pickup hay balers increased from 82 to 146, and corn pickers, from 10 to 14.

Rural electric lines are well distributed in the county. In 1950, these lines supplied 1,397 farms with electricity; and, in 1954, they supplied 1,492 farms. The number of farms having telephones increased from 435 in 1950 to 614 in 1954. Home freezers increased from 261 in 1950 to 469 in 1954.

General Soil Map

When one travels from place to place, he sees definite differences in the landscape. Although less noticeable, there are definite differences in the soils. In one area the soils may be steep, eroded, and shallow to parent material with small areas of smooth sandy soils on the ridges and very narrow strips of alluvial soil along the drains. Another area may consist mainly of well-drained, level and gently sloping soils that are moderately high in fertility; along drainageways, this area may include broad strips that are nearly level and very fertile. In the first area, forest is probably the best use. Most of the second area probably could be farmed intensively, and the strips along the drainageways could be used for pasture. This general information is not enough for planning the management of any one field. Nevertheless, on the basis of this information, a statement of agricultural potential and limitations could be made.

One may obtain a map of general soil areas, or, as they are called in this report, soil associations, by drawing lines around patterns of soil. These patterns may be similar to the two patterns described in the preceding paragraph, or they may be different from them. A map of general soil areas is useful to those who want only a general idea of the soils, or wish to compare different parts of the county, or want to locate large areas suitable for some particular kind of agriculture or other broad land use. The nine soil associations, or kinds of soil patterns, in Montgomery County are shown in colors on the general soil map at the back of this report. These areas are described in the following pages.

1. NEARLY LEVEL, WELL-DRAINED TO SOMEWHAT POORLY DRAINED SOILS ON FIRST BOTTOMS: CONGAREE-CHEWACLA-WEHADKEE.

This soil association makes up 2.6 percent of the county and occurs in one long, narrow strip along the Alabama and Tallapoosa Rivers. It extends from the northeastern corner of the county to a point north of Montgomery. It consists of nearly level, well-drained areas that are dissected by poorly drained sloughs and drainageways. The Congaree soils are well drained, and

the Wehadkee soil is poorly drained. About half of the association consists of Congaree soils.

The soils in this association have a surface soil that is generally grayish-brown to pale brown silt loam or silty clay loam. The subsoil is dark yellowish-brown to gray silt loam to silty clay loam. Congaree fine sandy loam occurs in small areas, mainly adjacent to stream banks.

Most of the well-drained parts of this association have been cleared. They are used for pasture, hay, and corn. Only a small acreage on the poorly drained soils has been cleared. The soils in this association are naturally productive. Because flooding is likely in winter, however, cultivation is limited mainly to summer crops. Floods occur occasionally in summer, but they do not last long. In many areas flood protection would not be economical.

Wheeled farm machinery can be used on most of this association, especially in summer. The soils are well suited to corn, grain sorghum, dallisgrass, and clovers, and high yields of these crops can be obtained.

2. Level and Very Gently Sloping, Well-drained to Poorly Drained Soils on Stream Terraces: Cahaba-Wickham-Roanoke.

This soil association occurs primarily in a belt that is about 2 to 5 miles wide. This belt extends eastward from the junction of Catoma Creek and the Alabama River almost to Mount Meigs. One small area is about 3 miles northeast of Cantelou. The association covers about 8 percent of the county.

This association consists mainly of broad, flat, well-drained areas that are dissected by poorly drained sloughs. Adjacent to the sloughs are moderately well drained gentle slopes. The Cahaba soils are at slightly higher elevations than the other soils in the association.

Much of this association is underlain by thick beds of gravel at depths of 4 to 10 feet. A number of gravel pits are commercially operated, one almost 1 square mile in size.

The well-drained soils normally have a grayish-brown fine sandy loam to silt loam surface soil and a yellowish-brown to yellowish-red subsoil. The poorly drained soils are generally gray to dark gray in the surface soil and are gray and mottled in the subsoil.

Included with the major soils in this association are the Izagora, Byars, Myatt, Altavista, Waugh, Independence, and Huckabee soils. These included soils make up about 30 percent of the acreage. The Independence and Huckabee soils are excessively drained. The Cahaba and Wickham soils are well drained, and the Byars, Myatt, and Roanoke soils are more poorly drained.

Most of the well-drained soils have been cleared and are in row crops, hay meadows, or pasture. Some of the best soils in the county for row crops are in this association. Part of the acreage in poorly drained soils could be improved by drainage, but in most areas this is not economically feasible. The need for row crops or pasture would have to be greater than it is to warrant artificial drainage in these areas.

Most farms in this association are large and are operated by tenants. The well-drained soils are physically well suited to the agriculture of the area, but they are somewhat low in fertility. They respond well, however, to good management that provides high fertilization, liming, and maintaining organic matter. Except on the most poorly drained areas, mechanized farm machinery can be used.

3. Level to Very Gently Sloping, Moderately Well Drained and Somewhat Poorly Drained Soils on Stream Terraces: Waugh-Augusta-Flint.

This soil association occurs in one large area, 3 or 4 miles wide and about 8 miles long, that makes up about 3 percent of the county. This area is in the northeastern corner of the county.

This association consists mainly of broad, flat, moderately well drained areas dissected by poorly drained sloughs and drainageways. The moderately well drained soils have a light brownish-gray and grayish-brown fine sandy loam surface soil and a yellowish-brown to yellowish red silty clay loam to sandy clay loam subsoil. The somewhat poorly drained soils have a dark-gray to dark grayish-brown fine sandy loam and silt loam surface soil. Their subsoil is gray, mottled sandy clay to sandy clay loam.

Included with the major soils in this association are the Leaf, Izagora, Byars, and Myatt soils.

Most of the acreage of moderately well drained soils has been cleared and is used for general row crops. The main crops are cotton, corn, and vegetables. A small part of the poorly drained soils has been cleared and is used chiefly for pasture. The better drained soils are physically suited to the agriculture of the area, but they are somewhat low in fertility. These soils, however, respond well to high fertilization, to liming, and to maintaining organic matter by the use of cover crops. Some of the poorly drained areas could be improved by drainage, but drainage is not economically feasible in many areas. Mechanized farm machinery can be used on the better drained soils of this association, especially during summer and fall.

4. Level to Sloping, Well-drained Soils on High Stream Terraces: Amite-Cahaba.

This soil association consists of one large area, a belt about 4 miles wide that extends from Montgomery eastward almost to the county line. It makes up about 8 percent of the county. Broad, level to gently sloping areas characterize most of this association. Two fairly large areas, however, have nearly level ridgetops with sloping to steep, highly dissected side slopes. One of these areas is near Montgomery, and the other is near Merry. The elevation of these two areas is 15 to 20 feet higher than that of the rest of the association.

The soils in this association have a surface soil that is dominantly grayish-brown to dark grayish-brown fine sandy loam. The subsoil ranges from strong brown to red in color and from sandy clay loam to sandy clay in texture. West of Merry, the Cahaba soils are finer textured and are at higher elevations than are the Cahaba soils in soil association 2.

The poorly drained soils along the narrow drainageways consist of sandy alluvium, which is variable in texture and color. These soils receive seepage water and overflow from surrounding soils. Iuka soils, local allu-

vium phases, occur in slight depressions and along drainageways in poorly drained areas. These soils have a dark-brown surface soil and a mottled subsoil.

Most of this association is cultivated chiefly for cotton. The area has some of the best cotton land in the county and produces most of the cotton grown. The side slopes were formerly cultivated, but they have reverted to pine trees or pasture.

Most of the acreage is well suited to cultivated crops. Farming can be highly diversified. The soils respond well to good management that provides high fertilization, liming, and maintenance of organic matter. The steeper side slopes erode readily if they are bare.

5. Nearly Level to Sloping Soils on the Upland and Associated First Bottoms and Local Alluvium of the Prairie Section: Sumter-Oktibbeha-Leeper.

This soil association consists of four areas that make up about 23 percent of the county. These areas occur mainly in a wide belt that runs through the central part of the county. They are separated from each other by wide areas of alluvial soils and soils on low terraces. The largest acreage is in the vicinity of Pike Road, Snowdoun, and Dannelly Field Municipal Airport.

This association consists mainly of fairly wide, nearly level to very gently sloping ridgetops, gently sloping to sloping side slopes, and fairly wide strips of alluvium along the drainageways. The soils are acid to alkaline and normally have a dark-brown to very dark brown clay to silty clay surface soil. In some of the more eroded areas of Sumter soils, the surface soil may be gray or light gray.

Vaiden, Houston, West Point, and Catalpa soils make up 10 percent of the association. Other minor soils are the Eutaw and the Tuscumbia. The Catalpa soil occupies flood plains and is the best drained soil on the first bottoms in the prairie section. The West Point soils are at the head of drainageways and, to some extent, at the base of slopes.

Adjacent to the Vaiden soils are the Eutaw soils, which are the poorest drained members of the Oktibbeha-Vaiden-Eutaw catena. The Eutaw soils are at a somewhat lower elevation than the Vaiden soils and are on smoother relief. The Sumter, Oktibbeha, Vaiden, and Houston soils occur on the ridgetops and side slopes. They have a clayey subsoil that is red in the Oktibbeha soils, light gray in the Sumter soils, yellowish brown in the Vaiden soils, and dark olive gray in the Houston soil.

Most of the cleared acreage is used for pasture, hay, or small grain. Some of the best soils in the county for improved pasture are in this area. Row crops are grown only on a few of the smoother ridgetops and along a few of the drainageways. Some of the steeper slopes of Oktibbeha and Vaiden soils are in forest.

Most farms in this association are larger than those in other parts of the county. The owners operate most of the farms. The farms are among the most prosperous in the county, and most of them have well-built and well-maintained buildings and fences. Dairy products and beef are the main products for sale.

The soils in this association respond well to good management that provides high fertilization and maintenance of organic matter. The Oktibbeha, Vaiden, and Eutaw soils need additions of lime.

6. Nearly Level, Moderately Well-drained to Somewhat Poorly Drained Soils on Low Stream Terraces and First Bottoms: Izagora-Geiger-Una.

This soil association occurs in two separate areas that together make up about 13 percent of the county. One area is small and occurs northeast of Mathews. The larger area extends southward from the Alabama River almost across the county. It extends in two prongs—one up Catoma Creek and its tributaries and the other along Pintlalla Creek and its tributaries. This association consists of fairly wide strips of moderately well drained to somewhat poorly drained soils on low stream terraces and flood plains. Most of the acreage in the county that has retarded drainage occurs in this association. The Kipling, Leeper, and Tuscumbia are the most extensive minor soils.

The soils in this association have a dominantly grayish-brown fine sandy loam or silty clay surface soil. Their subsoil is mottled sandy clay loam to clay. The Izagora and Kipling soils are the better drained soils.

About one-third of this association is in crops, one-half is in pasture, and the rest is idle or in woods. Because of a smaller demand than formerly for row crops, some of the area is turning into pasture and woodland. If additional cropland were needed, most of the acreage could be improved by artificial drainage, at least by the removal of surface water.

Most of the association is best suited to pasture. The soils respond fairly well to good management that provides fertilization and maintenance of organic matter. The Izagora, Kipling, and Geiger soils need additions of lime. Erosion is a problem on only a small part of the acreage.

7. Gently Sloping to Strongly Sloping Soils, in the Prairie Section, Underlain by Soft Limestone or Chalk: Oktibbeha-Sumter.

This soil association consists of areas that are dissected by tributary streams of Pintlalla and Catoma Creeks. It is in a belt that extends completely across the county and makes up the southern third of the prairie, or about 11 percent of the county.

This association consists mainly of long, winding, fairly narrow, very gently sloping ridgetops, and of fairly wide strips of alluvial soils along the drainageways. The topography is steeper and more dissected near the southern edge of this association than it is in the northern part.

Vaiden, Boswell, Chastain, Una, and mixed alluvial soils are in this association and make up about 22 percent of the total acreage.

The soils in this association are acid to alkaline. They generally have a dark-brown to dark-gray fine sandy loam to clay surface soil. In some of the more severely eroded areas, the Sumter soils have a gray or light-gray surface soil.

The Oktibbeha, Sumter, Vaiden, and Boswell soils occur on the ridgetops and side slopes. They have a clayey subsoil that is red in the Oktibbeha and Boswell soils, light gray in the Sumter soils, and yellowish brown in the Vaiden soils. The Chastain, Una, and mixed alluvial soils occur along the drainageways. These soils normally have a light brownish-gray to dark-brown fine sandy loam to clay surface soil and a predominantly

gray, mottled sandy clay to clay subsoil. The texture of the soils along the drainageways, in many places, is quite variable within a small area.

Most of the cleared acreage in this association is used for pasture, hay, or small grain. On the smoother slopes are some of the best soils in the county for improved pasture. Much of the acreage of acid soils on the steeper slopes is in woodland.

The soils along the drainageways are somewhat poorly drained to poorly drained. Some areas of these soils provide excellent summer pasture; but most of the acreage needs artificial drainage, and less than one-half is cleared.

Most of the farms in this association are operated by the owners. Except for those in soil association 5, the farms are generally larger than those in other parts of the county. Because slopes are steeper than those in soil association 5 and erosion is more severe, this association is not so productive as association 5.

The soils in this association respond well to good management that provides high fertilization, liming of acid soils, maintaining organic matter, and controlled grazing. These soils erode readily where they are bare.

8. Sloping to Steep Soils of Variable Texture of Uplands Underlain by Sands and Clays: Cuthbert-Lakeland-Boswell.

This soil association consists of three areas that occur in the southern part of the county. These areas extend in a wide belt southwestward from the Bullock County line to the southwestern part of Montgomery County. The association makes up about 22 percent of the county. Some of the steepest land in the county is in this area. The association consists mainly of long, fairly narrow, sloping ridgetops; steep side slopes; and, in the draws, narrow strips of sandy alluvium that is poorly drained.

The soils in this association have a dominantly grayish-brown fine sandy loam surface soil. The subsoil ranges from red sandy clay in the Boswell soils to pale-yellow loamy sands in the Lakeland soils. In many of the deeper road cuts in this area, marl, or Selma chalk, is exposed at various depths normally ranging from 8 to 10 feet. This alkaline material may be exposed in small areas on some of the steeper slopes, but these areas are generally too small to be shown, even on the detailed soil map.

Much of the acreage in Boswell soils in this association is underlain by sandy material rather than by the clayey materials that elsewhere underlie Boswell soils. In places the underlying material is a loamy sand at depths of 5 to 6 feet.

In addition to the Cuthbert, Lakeland, and Boswell soils, the Susquehanna, Sawyer, Shubuta, and Chastain soils are in this association.

Most of this association is in pine trees. Woodland management is showing good results in part of the area. The farm income would be increased if good woodland management were more widespread. Except for producing forest products, crops are grown mostly for home use. A small acreage is in crops—areas along ridgetops and some of the drainageways. Many fish ponds have been constructed. This association is more thinly populated than the others in the county.

9. Very Gently to Sloping, Moderately Well Drained to Well Drained Soils of the Uplands Underlain by Sands and Clays: Bowie-Shubuta-Ruston.

This soil association is in one area that extends from Ramer and Pine Level to Pike County. It makes up about 9 percent of the county. The northern edge of this association has long, fairly narrow, gently sloping ridgetops and fairly steep side slopes, and, along drainageways, narrow strips of Chastain soils and Sandy alluvial land, somewhat poorly drained. Southward to the county line, the topography is more gently sloping.

These soils have a dominantly grayish-brown fine sandy loam surface soil. The subsoil is yellowish-brown sandy clay loam in the Bowie soils, yellowish-red to strong-brown sandy clay loam in the Ruston soils, and yellowish-brown to red sandy clay in the Shubuta soils. Also in this association are small areas of Sawyer, Cuthbert, Lakeland, Susquehanna, Rains, and Chastain soils; the compact substratum phases of Klej soils; and Sandy alluvial land, somewhat poorly drained.

The smoother upland areas and the better drained areas along the drainageways are cultivated. Most of the steeper slopes that were once cultivated are in pine forest or unimproved pasture. Some of the steepest slopes are still in native vegetation.

Most farms in the association are small. They are general farms that produce mainly cotton, corn, and peanuts. The soils respond well to good management that includes high fertilization, liming, and maintenance of organic matter.

Use and Management of Soils

This section has four main parts. In the first part, the nationwide system of land capability classification is explained and management is suggested for capability units, or management groups of soils. The second part consists of a table that gives, for each soil in the county, estimated average yields under two levels of management. The third part discusses pasture management, and the fourth part, woodland management.

Capability Groups of Soils

Capability grouping is a system of classification that is used to show the relative suitability of soils for crops, grazing, forestry, or wildlife. It is a practical grouping based on the needs and limitations of the soils, the risk of damage to them, and also their response to management. There are three levels above the soil mapping unit in this grouping. They are the capability unit, subclass, and class.

The capability unit, which can also be called a management group of soils, is the lowest level of capability grouping. A capability unit is made up of soils similar in kind of management they need, in risk of damage, and in general suitability for use.

The next broader grouping, the subclass, is used to indicate the dominant kind of limitation. The letter symbol "e" indicates that the main limiting factor is risk of erosion if the plant cover is not maintained; "w" means that excess water retards plant growth or inter-

feres with cultivation; "s" shows that the soils are shallow or droughty, or that they have low fertility that is difficult to control. In some areas there is another subclass, "c," for soils that are limited chiefly by a climate that is too cold or too dry.

The broadest grouping, the land class, is identified by Roman numerals. All the soils in one class have limitations and management problems of about the same degree, but of different kinds, as shown by the subclass. All the land classes except class I may have one or more subclasses.

In classes I, II, and III are soils that are suitable for yearly or periodic cultivation of annual or short-lived crops.

Class I soils are those that have the widest range of use and the least risk of damage. They are level, or nearly level, productive, well drained, and easy to work. They can be cultivated with almost no risk of erosion and will remain productive if managed with normal care (fig. 4).

Class II soils can be cultivated regularly, but they do not have quite so wide a range of suitability as class I soils. Some class II soils are gently sloping; consequently, they need moderate care to prevent erosion. Other soils in class II may be slightly droughty or slightly wet, or somewhat limited in depth.

Class III soils can be cropped regularly but have a narrower range of use. These need more careful management than class II soils.

In class IV are soils that should be cultivated only occasionally or only under very careful management.

In classes V, VI, and VII are soils that normally should not be cultivated for annual or short-lived crops, but they can be used for pasture or range, for woodland, or for wildlife.

Class V soils are nearly level and gently sloping but are droughty, wet, low in fertility, or otherwise unsuitable for cultivation. Montgomery County has no class V soils.

Class VI soils are not suitable for crops because they are steep, or droughty, or otherwise limited, but they give fair yields of forage or forest products. Some soils in class VI can, without damage, be cultivated enough so that fruit trees or forest trees can be set out or pasture crops seeded.

Class VII soils provide only poor to fair yields of forage or forest products and have characteristics that limit them severely for these uses.

In class VIII, are soils that have practically no agricultural use. Some of them have value as watersheds, wildlife habitats, or for scenery. Montgomery County has no class VIII soils.

A brief description of the capability classes, subclasses, and units in Montgomery County is given in the following outline. For each class, subclass, and unit are given the approximate acreage in the respective grouping and the percentage of the county made up by this acreage.

Class I. Soils with few limitations that restrict their use. 18,310 acres; 3.6 percent.
- Unit A3–I–1: Nearly level, deep, well-drained, very friable fine sandy loams on stream terraces. 6,460 acres; 1.3 percent.

Figure 4.—**Grain sorghum on class I soil.**

- Unit B10–I–1: Nearly level, moderately deep to deep, moderately well drained to well drained, friable loamy soils on stream terraces. 11,850 acres; 2.3 percent.

Class II. Soils that have some limitations that reduce the choice of plants or require moderate conservation. 134,370 acres; 26.5 percent.
- Subclass IIe: Level to very gently sloping soils that are subject to erosion if not protected. 86,360 acres; 17.1 percent.
  - Unit A3–IIe–1: Very gently sloping, deep, friable fine sandy loams on stream terraces and uplands. 8,380 acres; 1.7 percent.
  - Unit A3–IIe–2: Nearly level, moderately well drained, moderately deep fine sandy loams on stream terraces. 3,880 acres; 0.8 percent.
  - Unit A3–IIe–3: Very gently sloping, moderately deep, moderately well drained fine sandy loams that have a compact or fine-textured lower subsoil. 4,090 acres; 0.8 percent.
  - Unit A6–IIe–1: Nearly level, slowly permeable, heavy clays that are calcareous in most places. 24,400 acres; 4.8 percent.
  - Unit A6–IIe–2: Nearly level, moderately well drained loams and clays on marine sediments underlain by Selma chalk. 19,820 acres; 3.9 percent.
  - Unit A6–IIe–3: Nearly level, dark-colored, slowly permeable, moderately well drained calcareous clays. 25,790 acres; 5.1 percent.
- Subclass IIs: Soils that are low in moisture-holding capacity. 9,990 acres; 1.9 percent.
  - Unit A3–IIs–1: Level to very gently sloping, deep, excessively drained loamy sands. 9,990 acres; 1.9 percent.
- Subclass IIw: Soils that are slightly wet or are subject to overflow. 38,020 acres; 7.5 percent.
  - Unit A3–IIw–1: Nearly level, deep, moderately well drained soils on local alluvium in slight depressions. 1,120 acres; 0.2 percent.
  - Unit A3–IIw 2: Nearly level, deep, moderately well drained to well drained loams on stream flood plains. 7,610 acres; 1.5 percent.

Unit A6–IIw–1: Nearly level, deep, somewhat poorly drained to moderately well drained, slowly permeable soils. 29,290 acres; 5.8 percent.

Class III. Soils with severe limitations that reduce the choice of plants or require special practices, or both. 113,860 acres; 22.5 percent.

Subclass IIIe: Sloping soils that are subject to erosion if not protected. 28,470 acres; 5.5 percent.

Unit A3–IIIe–1: Gently sloping, deep, well-drained, friable fine sandy loams. 2,760 acres; 0.5 percent.

Unit A3–IIIe–2: Very gently sloping, moderately deep, moderately well drained fine sandy loams on stream terraces. 1,470 acres; 0.3 percent.

Unit A3–IIIe–3: Very gently sloping, moderately deep soils that have restricted permeability in lower subsoil. 10,000 acres; 1.9 percent.

Unit A6–IIIe–1: Nearly level or very gently sloping, slowly permeable clays that are calcareous in most places. 6,750 acres; 1.3 percent.

Unit A6–IIIe–2: Very gently sloping, slowly permeable, acid clays over Selma chalk. 7,490 acres; 1.5 percent.

Subclass IIIw: Level or nearly level, somewhat poorly drained or moderately well drained soils that are likely to be flooded or to have a high water table. 85,390 acres; 16.9 percent.

Unit A3–IIIw–1: Level or nearly level, somewhat poorly drained or moderately well drained loamy soils on stream flood plains. 11,580 acres; 2.3 percent.

Unit A3–IIIw–2: Level to very gently sloping, somewhat poorly drained to moderately well drained loamy soils that have a compact or clayey subsoil and a periodically high water table. 22,480 acres; 4.4 percent.

Unit A6–IIIw–1: Nearly level, deep, somewhat poorly drained or poorly drained, slowly permeable, acid soils subject to overflow. 20,760 acres; 4.1 percent.

Unit A6–IIIw–2: Nearly level, somewhat poorly drained to poorly drained, slowly permeable, plastic soils on low stream terraces or flood plains. 19,040 acres; 3.8 percent.

Unit A6–IIIw–3: Level or nearly level, deep, somewhat poorly drained, slowly permeable soils on stream terraces. 11,530 acres; 2.3 percent.

Class IV. Soils with severe limitations that restrict the choice of plants, require very careful management, or both. 111,850 acres; 22.1 percent.

Subclass IVe: Gently sloping or sloping, eroded soils that are fairly well suited to limited cultivation. 45,330 acres; 9.0 percent.

Unit A3–IVe–1: Gently sloping to sloping, well-drained, friable soils on stream terraces and uplands. 1,920 acres; 0.4 percent.

Unit A3–IVe–2: Gently sloping, moderately deep, moderately well drained loams that have moderately high runoff and a slowly permeable lower subsoil. 13,620 acres; 2.7 percent slopes.

Unit A6–IVe–1: Very gently sloping to gently sloping, fine-textured, slowly permeable soils that are calcareous in most places. 17,580 acres; 3.5 percent.

Unit A6–IVe–2: Very gently sloping or gently sloping, fine-textured, slowly permeable, acid, clayey soils over Selma chalk. 12,210 acres; 2.4 percent.

Subclass IVs: Excessively drained sandy soils. 5,820 acres; 1.1 percent.

Unit A3–IVs–1: Moderately well drained to excessively drained loamy fine sands with low capacity for holding moisture and plant nutrients. 5,820 acres; 1.1 percent.

Subclass IVw: Poorly drained soils that are difficult to manage so that crops can be grown. 60,700 acres; 12.0 percent.

Unit A3–IVw–1: Somewhat poorly drained or poorly drained soils of variable texture on nearly level low stream terraces or flood plains. 50,530 acres; 10.0 percent.

Unit A6–IVw–1: Nearly level, poorly drained, slowly permeable, fine-textured soils. 10,170 acres; 2.0 percent.

Class VI. Soils with severe limitations that make them generally unsuited for cultivation and limit their use largely to pasture or range, woodland, or wildlife food or cover. 53,230 acres; 10.6 percent.

Subclass VIe: Soils not suitable for cultivation because of steep slopes, erosion, or shallow profiles. 53,230 acres; 10.6 percent.

Unit A3–VIe–1: Gently sloping to steep, strongly acid soils with moderate or severe erosion or shallow soils with excessive runoff. 20,040 acres; 4.0 percent.

Unit A6–VIe–1: Gently sloping or sloping, severely eroded or gullied soils with excessive runoff, mostly calcareous clays. 16,650 acres; 3.3 percent.

Unit A6–VIe–2: Gently sloping to steep, moderately well drained, acid loams and clays over Selma chalk. 16,540 acres; 3.3 percent.

Class VII. Soils with very severe limitations that make them unsuited for cultivation and that restrict their use largely to grazing, woodland, or wildlife. 53,740 acres; 10.6 percent.

Subclass VIIe: Sloping to steep, moderately eroded to severely eroded, shallow soils. 53,740 acres; 10.6 percent.

Unit A3–VIIe–1: Sloping to steep, mainly shallow soils that are moderately eroded to severely eroded or gullied. 53,740 acres; 10.6 percent.

Management by capability units

In this subsection the soils of Montgomery County are placed in capability units, or management groups. Described for each capability unit are the characterstics that the soils have in common, the uses to which the soils are suited, and the management the soils require.

The suggestions for management of the various groups of soils may not exactly suit the needs of all the farmers in the county. Each farm has conditions peculiar to itself. Some of these may call for systems of management that differ from those discussed in this subsection.

Specific statements about amounts of lime and grades and amounts of fertilizer cannot be given for the soils in the capability unit. The present needs of the soils in any capability unit vary according to past management and cropping. Therefore, the amounts of lime and fertilizer used should be based on recommendations from the Soil Testing Laboratory at Auburn.

CAPABILITY UNIT A3–I–1

Nearly level, deep, well-drained, very friable fine sandy loams on stream terraces

Amite fine sandy loam, level phase.
Cahaba fine sandy loam, level phase.

These soils have a reddish brown to grayish-brown plow layer and a red to strong-brown, friable, sandy clay loam subsoil. Most of their parent material is old alluvium that was washed from well-drained upland soils.

These soils have moderately high infiltration, permeability, and capacity for holding available moisture. They are medium acid to strongly acid and are moderately fertile. The amount of organic matter and plant nutrients these soils now contain depends largely on past cropping and management.

Use, suitability, and management.—Nearly all the acreage of these soils has been cleared and cropped. Cotton, corn, and small grain are grown extensively; cotton is the most important cash crop (fig. 5). Much of the acreage is farmed intensively, and a complete fertilizer and lime are commonly used. Yields are moderately high to high if these soils are planted to suitable crops and are adequately fertilized.

These soils are well suited to practically all crops and legumes and grasses grown in the county. They are among the best soils in the county for cotton (fig. 6). Partly because of the slight runoff and erosion, crop rotations are not needed. Winter cover crops and crop residue normally protect these soils and add enough organic matter to maintain good tilth, increase infiltration and permeability, and increase the capacity for holding available moisture.

Although these soils are relatively fertile, they respond to high fertilization. Lime and organic matter ought to be added at intervals as indicated by soil tests.

CAPABILITY UNIT B10–I–1

Nearly level, moderately deep to deep, moderately well drained to well drained, friable loamy soils on stream terraces

Altavista very fine sandy loam.
Wickham silt loam.
Wickham fine sandy loam, level phase.

These soils have, in most places, a grayish-brown or brownish-gray, sandy or silty plow layer and a yellowish-brown or yellowish-red, fine sandy clay or silty clay loam subsoil. Most of the parent material is old alluvium that was washed from the soils on the Piedmont, but some was washed from the soils on the Coastal Plain.

The soils of this unit have moderate infiltration and permeability and moderately high capacity for holding available moisture. They are moderately low in natural fertility and in organic matter. The present content of organic matter and plant nutrients depends on the cropping systems and management during the past few years. The tilth is generally good.

***Figure 5.*—Picking cotton on Amite fine sandy loam, level phase.**

Use, suitability, and management.—Most of the acreage of these soils has been cleared and is used intensively for row crops. These soils are among the best in the county for row crops. Nevertheless, they are not so well suited to row crops as the soils in unit A3–I–1, and they cannot be cultivated so early in spring.

These soils are well suited to cotton, corn, truck crops, hay, small grain, and pasture. Suitable pasture plants are fescue, bahiagrass, bermudagrass, crimson clover, and white clover. Cotton, corn, or another row crop can be grown each year if it is followed by a winter legume or a small grain that is turned under in spring. The legume or small grain provide crop residue that is needed to maintain good tilth, increase infiltration and permeability, and increase the capacity for holding available moisture.

A complete fertilizer ought to be applied as indicated by soil tests. Lime and organic matter are also needed.

***Figure 6.*—Cotton on Amite fine sandy loam, level phase. This field will yield more than 700 pounds of lint per acre.**

Pasture needs periodic applications of phosphate, potash, and lime. The pasture is also improved by regulating grazing, and by mowing or spraying at intervals to control undesirable plants. The pasture is damaged by overgrazing, and some plants become unpalatable if the pasture is undergrazed.

These soils do not need special practices of tillage or supplementary water control.

CAPABILITY UNIT A3–IIe–1

Very gently sloping, deep, friable fine sandy loams on stream terraces and uplands

Amite fine sandy loam, eroded very gently sloping phase.
Cahaba fine sandy loam, eroded very gently sloping phase.
Ruston fine sandy loam, eroded very gently sloping phase.
Wickham fine sandy loam, eroded very gently sloping phase.

These soils have a grayish-brown to dark-brown sandy loam surface soil. Their subsoil is strong-brown to red, friable sandy clay loam.

These soils are moderate to low in fertility and are strongly acid. Infiltration has been lessened because some of the original surface soil has been washed away. To a depth of several feet, however, the subsoil has moderate to moderately rapid permeability. The capacity for holding available moisture is medium. These soils have good tilth and are easy to work. They respond well to fertilizer.

Use, suitability, and management.—Most of the acreage of this unit has been cleared and is used for cultivated crops. The unit as a whole is one of the best in the county for growing row crops. It has a wide range in use and is suited to most crops grown in the area.

The row crops ought to be grown in a suitable cropping system. One such system has a reseeding legume the first year and a full-season summer row crop the second and third years. A reseeding legume is one that will volunteer for several years after a mature seed crop is turned into the soil. Caley peas, and grandiflora vetch are suitable legumes for this cropping system.

Although these soils are gently sloping, they need a complete water-disposal system that has terraces, natural waterways in permanent grass cover, and crop rows on the contour.

These soils need to be fertilized and to have lime and organic matter added. Almost any kind of farm machinery can be used.

CAPABILITY UNIT A3–IIe–2

Nearly level, moderately well drained, moderately deep fine sandy loams on stream terraces

Flint fine sandy loam, level phase.
Waugh fine sandy loam, level phase.

These soils have a grayish-brown or brownish-gray fine sandy loam surface soil. Their subsoil is yellowish-red to yellowish-brown, firm to friable sandy clay to silty clay loam.

These soils are only moderately permeable in the upper part of the subsoil, and permeability decreases with increasing depth. Moisture relations, however, are favorable for growing most spring and summer crops. These soils are fairly easy to work and are moderately productive. They respond moderately well to fertilizer.

Use, suitability, and management.—Most of the acreage has been cleared and is used mostly for row crops. Important cash crops are cotton, corn, and some vegetables. A fairly wide range of crops and pasture plants grow well.

These soils need to be tilled more carefully than the more sandy soils; they will puddle when they are wet and break into tough clods if they are plowed when they are extremely dry.

Although these soils do not need grasses or legumes to control erosion, a cropping system that provides 1 year of reseeding legumes or grasses with 2 or 3 years of row crops is desirable. The legumes and grasses improve tilth, increase organic matter, and increase infiltration and permeability. Additions of fertilizer increase yields; lime needs to be added at times.

These soils do not need special practices of tilling or supplementary practices of water control. Almost all types of farm machinery can be used, especially during the cropping season.

CAPABILITY UNIT A3–IIe–3

Very gently sloping, moderately deep, moderately well drained fine sandy loams that have a compact or fine-textured lower subsoil

Bowie fine sandy loam, level phase.
Bowie fine sandy loam, very gently sloping phase.
Prentiss very fine sandy loam, level phase.
Prentiss very fine sandy loam, eroded very gently sloping phase.
Sawyer fine sandy loam, very gently sloping phase.
Shubuta very fine sandy loam, very gently sloping phase.

These soils are on the uplands and on stream terraces. They have a grayish-brown, sandy surface soil. Their subsoil is yellowish red, yellowish brown, or light olive brown and ranges from fine sandy clay loam to sandy clay in texture.

These soils have moderate to moderately rapid permeability in the upper part of the subsoil. Because of the compact or fine-textured layer, however, permeability decreases with increasing depth. The natural fertility is low, and the reaction is strongly acid. These soils are fairly easy to work and to conserve.

Use, suitability, and management.—Most of the acreage has been cleared and is now used for the commonly grown row crops. The soils are moderately productive and are suited to intensive cultivation. They are fairly well suited to most pasture grasses and legumes (fig. 7).

The more sloping areas of these soils generally need a complete system of water disposal that has terraces, vegetated waterways, and crop rows on the contour.

Even in areas that do not need water-disposal measures, a cropping system that provides 1 year of grasses or legumes after 2 or 3 years of row crops is desirable. To maintain production, add commercial fertilizer and lime in the amounts indicated by the soil tests.

CAPABILITY UNIT A6–IIe–1

Nearly level, slowly permeable, heavy clays that are calcareous in most places

Sumter clay, eroded nearly level phase.
Sumter-Oktibbeha Vaiden clays, eroded nearly level phases.

These are prairie soils that have slopes of less than 3 percent in most places. Most areas have a very dark gray clay surface soil, but a few small patches in the Sumter-Oktibbeha-Vaiden complex have a surface soil

Figure 7.—**Peanuts on Bowie fine sandy loam, level phase.**

of reddish-brown to dark grayish-brown clay or silty clay. In most places the subsoil is gray to olive-gray, firm clay, but in a few small areas it is red or yellowish-brown clay. The parent material, in most areas, was derived from Selma chalk. The material in these areas is moderately alkaline to strongly alkaline. In a few areas the Selma chalk is capped with marine clays that range from a few inches to 3 or 4 feet in thickness. These areas are strongly acid.

These soils have moderately slow to slow infiltration and permeability and moderately high capacity for holding available moisture. They are usually fairly wet in winter and early in spring, but they become hard and dry and have many cracks in summer and fall. The natural fertility is low. Under the best conditions, these soils are fairly easy to work.

Use, suitability, and management.—Nearly all of the acreage has been cleared and is now used extensively for pasture, hay, and small grain. A small acreage is in corn, cotton, and other row crops. These soils are used mostly to grow feed for dairy cattle and beef cattle. Most of the cash income for farms on these soils comes from the sale of dairy products and beef products.

The soils in this unit are best suited to pasture grasses and clovers, small grain, and hay. They are among the best alfalfa soils in the county. The Sumter soil is particularly well suited to alfalfa. Because the soils in this unit are firm and fine textured, they are not very well suited to row crops. A sod vegetation is more suitable than row crops because runoff is greater than on more permeable soils. Runoff and erosion can be controlled by using a cropping system that has a small grain followed by 2 or 3 years of perennial grasses and legumes grown for pasture or hay.

Most of the commonly grown pasture grasses and legumes are well suited to these soils. The pasture does not need special management. A complete fertilizer is needed for the grasses, but only phosphate and potash are required for the legumes. If these soils are adequately fertilized, productivity is moderately high to high. Because the soils are fine textured, they need additions of organic matter to increase infiltration and permeability. Additions of lime are needed only on areas that have a capping of strongly acid marine clays over the Selma chalk.

Most any kind of farm machinery can be used on these soils, but, if the soils are plowed when they are extremely dry, they break into resistant clods. Supplementary measures for water control are not needed.

CAPABILITY UNIT A6–IIe–2

Nearly level, moderately well drained loams and clays on marine sediments underlain by Selma chalk

Oktibbeha fine sandy loam, eroded nearly level phase.
Oktibbeha clay, eroded nearly level phase.
Vaiden fine sandy loam, level phase.
Vaiden fine sandy loam, nearly level phase.
Vaiden fine sandy loam, eroded nearly level phase.
Vaiden silty clay, level phase.
Vaiden silty clay, nearly level phase.
Vaiden silty clay, eroded nearly level phase.

These soils have a very dark grayish-brown to reddish-brown fine sandy loam, silty clay, or clay surface soil. Their subsoil is red to yellowish-brown clay. The parent material consists of sediments of marine clay that are underlain by Selma chalk. The marine clay is strongly acid, but the Selma chalk is medium to highly alkaline. In most places, the depth to the alkaline material ranges from about 24 to 48 inches.

These soils have moderately slow to slow infiltration and permeability. They have a moderately high capacity for holding available moisture. They are usually fairly wet in winter and early in spring, but they become hard and dry late in summer and in fall. They check and crack during extremely dry weather. These soils are low in fertility and organic matter but respond well to fertilizer and lime.

Use, suitability, and management.—More than two-thirds of the acreage in this unit has been cleared and is used for pasture, hay, and some small grains. Most of the cash income comes from the sale of dairy products and beef products.

These soils are best suited to pasture grasses and clover, hay, and small grain. They are well suited to most pasture grasses commonly grown in this county. If they are adequately fertilized and limed, they will produce good yields of most clovers. These soils are not very difficult to plow if their moisture content is good. If they are extremely dry, however, they are difficult to plow unless power equipment is used and resistant clods are broken. Most any type of machinery can be used.

A crop rotation ought to be used that adds organic matter and improves infiltration and permeability. Additions of fertilizer and lime are also needed. A suitable rotation is 4 or 5 years of grasses and legumes followed by 1 or 2 years of small grain or sorghum. After pasture is grown for 7 or 8 years in the same place, johnsongrass is almost eradicated. Then 2 years of row crops can be grown before the johnsongrass is troublesome again.

These soils require no special practices to control water.

CAPABILITY UNIT A6–IIe–3

Nearly level, dark-colored, slowly permeable, moderately well drained calcareous clays

Houston clay, eroded nearly level phase.
West Point clay, level phase.
West Point clay, nearly level phase.

Figure 8.—**Baled johnsongrass hay on West Point clay, nearly level phase.**

These soils have a very dark gray to almost black clay surface soil and an olive-gray to dark olive-gray clay subsoil. Most of the parent material was derived from Selma chalk, which is commonly called, marl. The Houston soil developed in place, and the West Point soils are on local alluvium.

These soils have moderately slow infiltration and permeability and a moderately high capacity for holding available moisture. They are medium to high in natural fertility and respond well to mineral fertilizer. They contain a moderately high amount of organic matter. The reaction is moderately alkaline.

Use, suitability, and management.—Nearly all the acreage in this unit has been cleared. Much of the cleared acreage was used for row crops, but now most of it is in pasture, hay, and small grain. Most of the cash income for farms on these soils comes from the sale of dairy products and beef.

These soils are among the best in the county for pasture and hay (fig. 8). They are well suited to white-clover, caley peas, dalligrass, and johnsongrass. A complete fertilizer is needed for grasses, but legumes need only phosphate and potash.

Since these soils are used very little for row crops, a short rotation of close-growing crops adequately controls erosion. A suitable rotation consists of 1 year of small grain followed by 2 or 3 years of grasses or legumes, or both, for hay or pasture.

Power equipment is needed for tilling because these soils are firm and fine textured. They do not need special practices for water control. In the more nearly level areas, however, shallow ditches improve surface drainage in winter and early in spring.

CAPABILITY UNIT A3–IIs–1

Level to very gently sloping, deep, excessively drained loamy sands

Huckabee loamy sand, 0 to 5 percent slopes.
Independence loamy sand, 0 to 5 percent slopes.
Klej loamy fine sand, compact substratum, 0 to 5 percent slopes.
Lakeland loamy fine sand, 0 to 5 percent slopes.

These soils are on uplands or stream terraces. They consist of loamy sand or loamy fine sand that extends to depths of at least 30 inches. They have a loose, light brownish-grey to very dark grayish-brown surface soil. Their subsoil is pale-yellow to strong-brown or yellowish-brown loamy sand.

The surface soil and the subsoil have very rapid infiltration and permeability. The capacity for holding available moisture is low. Runoff is not a problem, but plant nutrients are leached from the soil excessively. Natural fertility is low, and the reaction is strongly acid.

Use, suitability, and management. The soils in this unit produce high yields of peanuts, of some truck crops, and of a few other crops, but yields of most crops are moderately low. Bahiagrass and coastal bermudagrass grow well, especially if they are adequately fertilized. Although they are easy to work and conserve, these soils need large amounts of organic matter and additions of fertilizer in amounts indicated by soil tests.

A suitable rotation for this capability unit is 2 years of bahiagrass and 3 years of row crops, each followed by a winter legume. Cover crops reduce leaching and, when turned under, add organic matter.

CAPABILITY UNIT A3–IIw–1

Nearly level, deep, moderately well drained soils on local alluvium in slight depressions

Iuka soils, local alluvium phases, are the only soils in this capability unit. They occur in slight depressions or at the head of drainageways. The color and texture of these soils depend on the kinds of the surrounding soils from which the alluvium was washed. In most places these soils have a silt loam surface soil. Their subsoil is dark grayish-brown silty clay loam to silt loam that is mottled in the lower part.

These soils have moderate to moderately rapid infiltration and permeability in the upper part of the profile. The natural fertility is high, and these soils respond well to fertilizer. Because of the great runoff from the adjoining areas, water may stand on these soils for several days, especially in winter and early in spring. Good tilth is not difficult to maintain if these soils are cultivated when their moisture content is good.

Use, suitability, and management. These soils are sometimes planted to cotton when they occur with larger areas of other soils that are planted to cotton. The cotton on these soils, however, grows rank and yields less than on the surrounding soils. These soils are best suited to corn, summer truck crops, hay, and pasture. Yields are high.

Additions of fertilizer and lime increase yields. Some areas are improved by artificial drainage, but the open-ditch method of drainage is not feasible where surrounding soils are higher than Iuka soils, local alluvium phases. Diversion terraces or ditches will reduce the runoff from the surrounding soils.

CAPABILITY UNIT A3–IIw–2

Nearly level, deep, moderately well drained to well drained loams on stream flood plains

Congaree fine sandy loam.
Congaree silt loam.
Iuka soils.
Ochlockonee silt loam.

These soils have a brown to very dark grayish-brown silt loam to fine sandy loam surface soil. Their subsoil is grayish-brown to dark-brown silt loam or silty clay loam. The parent material has washed from soils on the Coastal Plain and from soils on the Piedmont that have a noticeable amount of small mica flakes throughout their profile.

These soils have moderate to moderately rapid infiltration and moderate to rapid permeability. They are moderately high to high in natural fertility. Fertility is increased from time to time by sediments that are deposited when these soils are flooded. Most floods are in winter and early in spring, but they seldom last for more than 3 or 4 days. The response to fertilizer is good. The reaction is medium acid to strongly acid. These soils are fairly easy to work and have good tilth. Tilth can be maintained if these soils are cultivated when their moisture content is favorable.

Use, suitability, and management.—Practically all the acreage in this unit has been cleared and is in pasture or row crops. The soils are among the most productive in the county. They are well suited to corn, hay, small grain, most pasture grasses, and legumes. Although they are fairly well suited to cotton, the rank growth of the cotton impairs harvesting, and the boll weevil is difficult to control. Oats also have rank growth and are damaged at about harvest time by lodging. Floods rarely cause complete crop failure.

Although this unit consists of very fertile soils, additions of fertilizer increase yields. Fertilizer and lime ought to be added as indicated by soil tests. Fertilizer increases the carrying capacity of pasture and improves the quality of the forage. Most types of farm machinery can be used on these soils, particularly in summer and fall.

These soils require no special tillage or supplementary water control.

CAPABILITY UNIT A6–IIw–1

Nearly level, deep, somewhat poorly drained to moderately well drained, slowly permeable soils

Catalpa clay.
Kaufman clay loam.
Leeper silty clay.

These soils have a very dark grayish-brown to black clay loam to clay surface soil. Their subsoil is very dark grayish-brown to dark-gray silty clay or clay. In some places, the lower subsoil is mottled. These soils are on the stream flood plains in the prairie section of the county. Most of their parent material was washed from upland soils in the prairie section.

These soils have moderately slow infiltration and permeability and a moderately high capacity for holding available moisture. They are slightly acid to moderately alkaline. Their natural fertility is moderately high. They are likely to be flooded. They are the best drained soils on the flood plains in the prairie section, but they remain fairly wet in winter and early in spring. Some of their natural fertility results from periodic deposit of fine sediments by floodwaters.

Use, suitability, and management.—About three-fourths of the acreage in these soils has been cleared, and much of this is in pasture and hay. These soils are well suited to clovers and pasture grasses, especially johnsongrass. Their use of crops is somewhat limited by the fine texture and compactness of the soils and by the hazard of flooding. Corn is a suitable crop when rainfall is not excessive. Since the soil is wet in winter and spring, small grain is not suitable.

Additions of fertilizer increase yields. If the main stream channels, in many places, are straightened or widened, floodwaters will be removed faster than normal and surface drainage will be improved. The use of heavy farm machinery is somewhat restricted in winter and spring because of wetness.

CAPABILITY UNIT A3–IIIe–1

Gently sloping, deep, well-drained, friable fine sandy loams

Amite fine sandy loam, eroded gently sloping phase.
Cahaba fine sandy loam, eroded gently sloping phase.
Ruston fine sandy loam, eroded gently sloping phase.
Wickham fine sandy loam, eroded gently sloping phase.

These soils are on stream terraces and uplands. They have a dark grayish-brown to dark-brown fine sandy loam surface soil. Their subsoil is a strong-brown to red sandy clay loam to silty clay.

The soils in this unit have moderate to moderately high infiltration and permeability. Their capacity for holding available moisture is moderate. The natural fertility is low to moderate, but response to fertilizer is good. These soils are medium acid to strongly acid. They have fair tilth and are fairly easy to work. They are more susceptible to erosion than are the soils in unit A3–IIe–1.

Use, suitability, and management.—These soils are among the best in the county for cotton, corn, peanuts, and other row crops. But they are not so well suited to row crops as are the soils of unit A3–IIe–1. They are well suited to almost all the pasture grasses and legumes commonly grown in the county. These soils need additions of fertilizer, lime, and organic matter. The fertilizer and lime ought to be added according to the results of soil tests.

A suitable rotation consists of a row crop followed in fall by a small grain, lespedeza seeded in the grain the second year, and volunteer lespedeza the third year. If the grasses are used in the rotation instead of small grain and legumes, the grasses ought to be grown for 4 years and be followed by 2 years of row crops that grow all summer.

A complete system of water disposal is needed to protect these soils against erosion. The system ought to provide terraces, vegetated natural waterways, crop rows on the contour, and suitable crop rotations.

CAPABILITY UNIT A3–IIIe–2

Very gently sloping, moderately deep, moderately well drained fine sandy loams on stream terraces

Flint fine sandy loam, eroded very gently sloping phase.
Waugh fine sandy loam, eroded very gently sloping phase.

These soils have a grayish-brown to light olive-brown fine sandy loam surface soil that is thinner than the surface soil in the soils of capability unit A3–IIe–2. The subsoil is yellowish-red to yellowish-brown, firm to friable silty clay loam to clay. Old alluvium that was washed from soils on the Coastal Plain makes up most of the parent material.

Permeability is moderate through the upper part of the subsoil but decreases with increasing depth. In-

filtration is slower than in the soils of capability unit A3 IIe–2, and erosion is a greater hazard. The capacity for holding available moisture is moderately high. These soils are strongly acid and are low in natural fertility. They are moderately productive and fairly easy to work but have poorer tilth than the soils of capability unit A3–IIe–2. They respond moderately well to fertilizer.

Use, suitability, and management.—These soils are used for row crops and for pasture, but they need exacting management to protect them against erosion. They need additions of fertilizer and lime in amounts and at rates indicated by soil tests.

A rotation that provides sod crops 2 years in 3 ought to protect the soils against erosion and supply ample organic matter. To control runoff, till on the contour and keep the natural waterways in grass. Most slopes need to be terraced.

These soils need to be tilled more carefully than the more sandy soils because they puddle if they are plowed when wet and break into resistant clods if plowed when extremely dry. All kinds of farm machinery can be used with few limitations.

CAPABILITY UNIT A3–IIIe–3

Very gently sloping, moderately deep soils that have restricted permeability in lower subsoil

Boswell fine sandy loam, eroded nearly level phase.
Bowie fine sandy loam, eroded very gently sloping phase.
Bowie fine sandy loam, eroded very gently sloping thin solum phase.
Sawyer fine sandy loam, eroded very gently sloping phase.
Shubuta very fine sandy loam, eroded very gently sloping phase.
Shubuta-Cuthbert fine sandy loams, eroded very gently sloping phases.

These soils are on the Coastal Plain uplands. They have a light grayish-brown fine sandy loam surface soil. Their subsoil is yellowish-brown to yellowish-red or red fine sandy loam to sandy clay. In some places these soils have a compact, fine-textured layer in the lower subsoil.

These soils have moderately slow to moderately rapid infiltration. Permeability is moderately rapid in the upper subsoil and slow in the lower subsoil for the Bowie and Sawyer soils and moderate to slow for the other soils. Runoff is rapid, particularly where the subsoil is compact. The natural fertility is low, and the reaction is strongly acid.

Use, suitability, and management.—The soils of this unit are used for close-growing crops and row crops, but their use for row crops is somewhat limited. Under exacting management, these soils are fairly well suited to cotton, corn, peanuts, and other row crops. Much of the acreage is best suited to pasture and pine trees.

These soils need annual additions of fertilizer and, at longer intervals, additions of lime. They should be covered with vegetation more of the time than sandy soils that do not have a compact subsoil. A rotation that provides sod crops 2 years in 3 will probably control erosion and supply enough organic matter to increase infiltration and permeability. Seed a winter cover crop after a row crop is harvested so that the soil will be protected from the heavy rains in winter and early in spring.

Use a complete system of water disposal to control erosion. The system should provide terraces, vegetated natural waterways, and rows on the contour.

CAPABILITY UNIT A6–IIIe–1

Nearly level or very gently sloping, slowly permeable clays that are calcareous in most places

Sumter clay, severely eroded nearly level phase.
Sumter clay, eroded very gently sloping phase.
Sumter-Oktibbeha-Vaiden clays, eroded very gently sloping phases.

These soils have, in most places, an olive-gray to very dark gray clay surface soil. A few small patches have a reddish-brown to dark-brown surface soil. The subsoil generally is light-gray to olive-gray clay, but, in a few small areas, it is red to yellowish-brown clay. The parent material was derived from Selma chalk in most areas. The soil material in these areas is moderately alkaline to strongly alkaline. In a few areas the Selma chalk is capped with marine clays that range from a few inches to 3 or 4 feet in thickness. These areas are strongly acid.

These soils have moderately slow to slow infiltration and permeability. They are usually fairly wet in winter and early in spring. In summer and fall, they are hard and dry and have many cracks. The natural fertility is low. These soils are fairly easy to work when their moisture content is good.

Use, suitability, and management.—These soils are used mostly to grow feed for dairy cattle and beef cattle. Small grain, hay, and pasture are the chief crops. Johnsongrass is the most common hay crop.

Most of the commonly grown pasture grasses and legumes are well suited to these soils, but row crops are not. The Sumter soils are especially well suited to alfalfa.

Grasses grown on the soils of this unit need additions of complete fertilizer, but legumes need only phosphate and potash. Add organic matter to increase infiltration and permeability. Lime is not needed in most places. The pasture can be improved by clipping or poisoning the undesirable plants and by regulating grazing. Overgrazing increases susceptibility to erosion, and undergrazing makes some of the grasses unpalatable. Prepare a good seedbed, and protect the young seedlings from grazing and trampling.

Runoff and erosion can be controlled by using a cropping system that has a small grain followed by 2 or 3 years of perennial grasses and legumes for hay or pasture. Most kinds of farm machinery can be used on these soils, but, if the soils are plowed when they are extremely dry, they break into resistant clods.

CAPABILITY UNIT A6–IIIe–2

Very gently sloping, slowly permeable, acid clays over Selma chalk

Oktibbeha fine sandy loam, eroded very gently sloping phase.
Oktibbeha clay, eroded very gently sloping phase.
Vaiden fine sandy loam, eroded very gently sloping phase.
Vaiden silty clay, eroded very gently sloping phase.

These soils have slopes of less than 5 percent in most places. They have a dark grayish-brown to reddish-brown fine sandy loam, silty clay, or clay surface soil. Their subsoil is yellowish-brown to red, firm, fine-textured clay that, in many places, is mottled in the lower part. The parent material consists of marine clay that was

deposited over Selma chalk or marl. This marine clay is strongly acid, but the chalk or marl is moderately alkaline to strongly alkaline. The depth to the alkaline material normally ranges from about 24 to 48 inches, but it may be shallower or deeper.

These soils have moderately slow to slow infiltration and permeability and a moderately high capacity for holding available moisture. The natural fertility is low, but response to fertilizer is good.

Use, suitability, and management.—About four-fifths of this unit has been cleared and is used extensively for pasture and hay. Some small grain is also grown. These soils are used mostly to grow feed for dairy cattle and beef cattle. Most of the cash income for farms on these soils comes from the sale of dairy products and beef products.

The soils of this unit are best suited to pasture grasses and clovers, hay, and small grain. They are fairly well suited to cotton, corn, and other row crops. Row crops, however, are not extensively grown, mostly because of the somewhat unfavorable tilth.

These soils are moderately productive when planted to suitable crops and adequately fertilized. They need large additions of organic matter to increase infiltration and permeability. They also need additions of lime. A rotation similar to that described for capability unit A6–IIe–2 is adequate for the soils in this unit.

Most types of farm machinery can be used on these soils, but, if the soils are plowed when they are extremely dry, they break into resistant clods. Unless these soils are used extensively for row crops, no supplementary practices to control water are needed.

CAPABILITY UNIT A3–IIIw–1

Level or nearly level, somewhat poorly drained or moderately well drained loamy soils on stream flood plains

Chewacla silt loam.
Mantachie soils.

These soils, in most places, have a very dark gray to dark-brown silt loam surface soil. In a few small areas, the surface soil is silty clay loam to sandy loam. The subsoil is gray or dark-gray, mottled silty clay loam to sandy loam. The soils in this unit developed from the same kind of parent material as have the soils in capability unit A3–IIw–2. But they are less well drained than the soils of unit A3–IIw–2 and are more susceptible to flooding. This is because they are at a slightly lower elevation on the flood plains. They are likely to have a high water table.

These soils have moderate to moderately slow infiltration and permeability. They are moderately high in natural fertility and receive periodic deposits of fine sediments that add to their fertility. They respond well to fertilizer. They are strongly acid.

Use, suitability, and management.—Nearly one-half of the acreage of these soils is in trees. The rest of the acreage is used for pasture, summer hay, corn, sugarcane, and other row crops.

Although these soils are productive, use is limited in areas that are somewhat poorly drained. These soils are fairly well suited to dallisgrass, lespedeza, whiteclover and other plants used for summer pasture. They are fairly well suited to corn in years of normal rainfall. This is particularly true of the Chewacla silt loam, which is slightly better drained than the Mantachie soils.

Although these soils are moderately high in natural fertility, they need additions of fertilizer. They also need lime. They cannot be cultivated so early in spring as the soils in capability unit A3–IIw–2. Open ditches will improve most areas, but, in many areas, it is not feasible to drain these soils. Farm machinery sometimes cannot be used on these soils, particularly heavy equipment in winter and spring.

CAPABILITY UNIT A3–IIIw–2

Level to very gently sloping, somewhat poorly drained to moderately well drained loamy soils that have a compact or clayey subsoil and a periodically high water table

Augusta silt loam and fine sandy loam.
Izagora fine sandy loam, level phase.
Izagora fine sandy loam, very gently sloping phase.
Izagora fine sandy loam, eroded gently sloping phase.
Pheba very fine sandy loam.
Stough fine sandy loam.

These soils have a light brownish-gray to very dark grayish-brown fine sandy loam surface soil. Their subsoil is light olive-brown to light yellowish-brown, mottled sandy clay loam to silty clay. At a depth of about 20 inches is a fragipan or a heavy, fine-textured layer. Most of the parent material is old alluvium that was washed from soils on the Coastal Plain uplands. Some was washed from the upland soils on the Piedmont.

The soils in this unit have moderate to moderately rapid permeability to a depth of about 20 inches, where the fragipan or the fine-textured layer occurs. Below this permeability is slow. In some places, the layer above the fragipan becomes saturated and water stands on the surface of the soil. These soils are strongly acid and are low in natural fertility.

Use, suitability, and management.—These soils are used mostly for pasture, but some areas are in row crops. Use is rather severely limited because drainage is impeded by the fragipan or the fine-textured layer. Fair yields of cotton or corn may be expected on the Izagora soils if the moisture content is good. The best use for these soils is pasture.

These soils need fertilizer annually and lime at longer intervals. In some areas it is feasible to remove surface water by dead-furrow and shallow-ditch drainage.

Only the sloping areas of the Izagora soils need a rotation to control erosion. When the soils of this unit are used for row crops, they need additions of organic matter to maintain good tilth. The use of heavy farm machinery is somewhat restricted during winter and spring when these soils are wet.

CAPABILITY UNIT A6–IIIw–1

Nearly level, deep, somewhat poorly drained or poorly drained, slowly permeable, acid soils subject to overflow

Mixed alluvial land.
Mixed local alluvial land.
Una clay.

These soils are along stream flood plains, narrow drainageways, and at the heads of small draws. They have a grayish-brown to dark-brown surface soil that ranges from clay loam to clay in texture. Their subsoil is gray, mottled clay.

The soils in this unit are susceptible to frequent flooding, especially in winter. These periods of flooding rarely last more than 24 to 48 hours. In some places runoff is received from surrounding areas. These soils have slow infiltration and permeability, but their capacity for holding available moisture is moderately high. They are wet in winter and early in spring. They are moderately high in natural fertility and respond well to fertilizer. The reaction is neutral to strongly acid.

Use, suitability, and management.—Less than one-half the acreage of this capability unit has been cleared, and it is now used mostly for pasture and hay. A few small areas are in row crops.

These soils are best suited to summer pasture and hay. Unless the distribution of rainfall is good, the few small areas planted to corn produce only moderate to low yields. These soils are not well suited to small grains.

These soils can be drained by open ditches. The ditches, however, ought to be closely spaced, for these soils are fine textured and the lateral movement of water is slow.

CAPABILITY UNIT A6–IIIw–2

Nearly level, somewhat poorly drained to poorly drained, slowly permeable, plastic soils on low stream terraces or flood plains

Geiger silty clay, overwash variant.
Tuscumbia fine sandy loam.
Tuscumbia silty clay.

These soils have a surface soil of dark gray to very dark gray silty clay or fine sandy loam. Their subsoil is mottled, gray silty clay or clay. They are on flood plains and on local alluvium that was deposited on some of the lower lying stream terraces.

These soils are likely to be flooded frequently, or they receive runoff from adjoining areas. Most of the flooding occurs in winter and spring but rarely lasts for more than 1 or 2 days. The natural fertility is medium to moderately high, and response to fertilizer is good. The reaction is neutral to moderately alkaline.

Use, suitability, and management.—About one half of the acreage of this capability unit has been cleared. Most of this cleared acreage is used for pasture and hay. Some is planted to corn, but this crop often fails when rainfall is excessive. These soils produce moderately high yields of suitable crops, but their use is limited by their susceptibility to flooding.

These soils are best suited to pasture and hay. Whiteclover and dallisgrass are the most suitable pasture crops, and johnsongrass is the most suitable hay crop. Since they are likely to be flooded in winter, these soils are not very well suited to winter pasture or to small grain.

These soils can be drained by open ditches. The ditches, however, ought to be closely spaced because these soils are fine textured and the lateral movement of water is slow.

CAPABILITY UNIT A6–IIIw–3

Level or nearly level, deep, somewhat poorly drained, slowly permeable soils on stream terraces

Kipling silty clay.
Kipling very fine sandy loam, level phase.
Kipling very fine sandy loam, eroded nearly level phase.

***Figure 9.*—Cattle grazing coastal bermudagrass on Kipling very fine sandy loam, level phase.**

These soils occupy terraces in the prairie section, at a medium height above streams. They have a grayish-brown to dark grayish-brown surface soil. Their subsoil is silty clay or clay that is yellowish brown in the upper part and intensely mottled in the lower part. Old alluvium that was washed from acid and alkaline materials is the parent material.

The soils of this unit have moderately slow to slow infiltration and permeability. Their capacity for holding available moisture is moderately high. Their reaction is medium acid. These soils are low in natural fertility, but they respond well to fertilizer.

Use, suitability, and management.—Almost all of the acreage in this unit has been cleared and is used mainly for pasture and hay. A small acreage is in corn, cotton, and similar row crops. These soils produce moderate yields of corn and cotton if rainfall is not excessive, but yields are smaller than normal in extremely wet periods. The more sloping areas produce fair yields of small grain.

These soils are best suited to pasture and summer hay. If adequately fertilized, they produce good yields of dallisgrass, common bermudagrass, coastal bermudagrass, (fig. 9) and most of the whiteclovers.

In the level areas, open ditches quickly remove excess surface water. In some areas, deeper ditches will improve internal drainage.

This capability unit has a small eroded acreage that generally is in strips around the borders of fields. Special management may not be feasible on these small strips, but pine trees can be planted or the strips can be used for wildlife habitats.

CAPABILITY UNIT A3–IVe–1

Gently sloping to sloping, well-drained, friable soils on stream terraces and uplands

Amite fine sandy loam, eroded sloping phase.
Amite sandy clay loam, severely eroded gently sloping phase.
Amite sandy clay loam, severely eroded sloping phase.
Ruston fine sandy loam, eroded sloping phase.

These moderately eroded or severely eroded soils have a strong-brown to red fine sandy loam or sandy clay loam surface soil. The subsoil ranges from strong brown to

red in color and from sandy clay loam to sandy clay in texture.

These soils have moderately low infiltration. The permeability of the subsoil is moderate to moderately rapid. The capacity for holding available moisture is moderate. Natural fertility is low, but response to fertilizer is moderately good. The reaction is medium acid to strongly acid.

Use, suitability, and management.—Because these soils are susceptible to erosion, their use for row crops is limited. If acreage is urgently needed for row crops, the row crops should be planted in a cropping system that keeps the soil in sod crops 3 years in every 4. But these soils are best suited to perennial hay, pasture, or pine trees.

Fertilizer and organic matter ought to be added to these soils. More organic matter is needed than on less severely eroded soils so that infiltration will be increased and runoff lessened. If they are used for row crops, these soils need terracing and vegetated waterways. Cultivation and other field operations should be on the contour. If used for pasture, these soils ought to have careful management that includes prevention of overgrazing.

CAPABILITY UNIT A3–IVe–2

Gently sloping, moderately deep, moderately well drained loams that have moderately high runoff and a slowly permeable lower subsoil

Boswell clay loam, severely eroded nearly level phase.
Boswell fine sandy loam, eroded very gently sloping phase.
Bowie fine sandy loam, eroded gently sloping phase.
Bowie fine sandy loam, eroded gently sloping thin solum phase.
Flint fine sandy loam, eroded gently sloping phase.
Sawyer fine sandy loam, eroded gently sloping phase.
Shubuta very fine sandy loam, eroded gently sloping phase.
Shubuta-Cuthbert fine sandy loams, eroded gently sloping phases.

These soils are mainly on uplands. They differ from the soils in capability unit A3–IIIe–3 chiefly in having steeper slopes. They have a light brownish-gray to light olive-brown surface soil. Their subsoil is yellowish-brown to yellowish-red sandy clay loam to sandy clay that is compact or fine-textured in the lower part.

These soils have moderate infiltration and rapid runoff. Permeability is moderate to moderately slow in some of the soils, but, in the Bowie and Sawyer soils, permeability is moderately rapid in the upper part of the subsoil. The soils in this unit are low in natural fertility but respond moderately well to fertilizer. The reaction is strongly acid.

Use, suitability, and management.—These soils are severely limited in their use for row crops. If row crops are grown, they should be planted in a cropping system that keeps the soil in sod crops 3 years in every 4 (fig. 10). After the row crop is harvested, a winter legume ought to be planted. These soils can be best used for perennial hay, pasture, and pine trees (fig. 11).

These soils need additions of fertilizer and more organic matter than the less severely eroded soils. The organic matter will increase the infiltration rate and help control the excessive runoff. When used for crops, these soils need a complete system of water disposal. When they are used for pasture, careful management that prevents overgrazing ought to be practiced.

***Figure 10.*—Ground cover of kudzu on Bowie fine sandy loam, eroded gently sloping phase.**

CAPABILITY UNIT A6–IVe–1

Very gently sloping to gently sloping, fine textured, slowly permeable soils that are calcareous in most places

Sumter clay, severely eroded very gently sloping phase.
Sumter clay, eroded gently sloping phase.
Sumter Oktibbeha-Vaiden clays, severely eroded very gently sloping phases.
Sumter-Oktibbeha-Vaiden clays, eroded gently sloping phases.

These soils are moderately deep to deep and moderately well drained to well drained. They have a dominant slope of about 5 percent, but their slopes range from 3 to 8 percent. Most areas have a light-gray to dark-gray clay surface soil, but a few small patches in the Sumter Oktibbeha-Vaiden complex have a surface soil that is reddish brown, grayish brown, or yellowish brown. In most places the subsoil is gray to olive-gray clay, but in a few small areas it is red or yellowish brown. The

***Figure 11.*—Well-managed, young pine forest.**

Figure 12.—**Sorghum on Sumter clay, eroded gently sloping phase.**

parent material, in most areas, was derived from Selma chalk. The material in these areas is moderately alkaline to strongly alkaline. In a few areas the Selma chalk is capped with marine clays that range from a few inches to 3 or 4 feet in thickness. These areas are strongly acid.

These soils have moderately slow to slow infiltration and permeability and moderately high capacity for holding available moisture. They are usually fairly wet in winter and early in spring, but they are hard and dry and may have many cracks and checks during summer and fall. The natural fertility is low. Under optimum conditions, these soils are fairly easy to work. They are moderately productive when properly fertilized.

Use, suitability, and management.—Nearly all of the acreage has been cleared. It is used extensively for pasture, hay, and small grain—crops that are used mostly to feed dairy cattle and beef cattle. Most of the cash income for farms on these soils comes from the sale of dairy products and beef.

These soils are best suited to pasture, hay, and small grain. The Sumter soils are among the best alfalfa soils in the county. The soils in this unit are not very well suited to row crops. A sod vegetation is more suitable than row crops because runoff develops more quickly than on some of the more permeable soils. Although the use of hay, pasture, or small grain adequately controls erosion, a rotation that increases aeration by plowing vegetation into the soil is desirable. A suitable rotation for this purpose is 5 or 6 years of perennial grasses and legumes followed by 1 or 2 years of small grain or sorghum (fig. 12).

Nearly all of the pasture grasses and legumes commonly grown in the county are well suited to these soils. Good pasture management is needed to protect the soils and keep them productive. This includes controlled grazing, removal of undesirable plants by mowing or poisoning, and protection of young plants from excessive trampling. A complete fertilizer is needed for the grasses, but only phosphate and potash are needed for the legumes. Except on small patches of Oktibbeha or Vaiden soils, liming is not needed. Large additions of organic matter are needed.

Most any kind of farm machinery can be used on these soils, but gullies somewhat limit the use of this machinery. If these soils are plowed when they are extremely dry, they break into resistant clods.

CAPABILITY UNIT A6–IVe–2

Very gently sloping or gently sloping, fine-textured, slowly permeable, acid, clayey soils over Selma chalk

Oktibbeha clay, eroded gently sloping phase.
Oktibbeha clay, severely eroded very gently sloping phase.
Oktibbeha fine sandy loam, eroded gently sloping phase.
Vaiden fine sandy loam, eroded gently sloping phase.
Vaiden silty clay, eroded gently sloping phase.
Vaiden silty clay, severely eroded very gently sloping phase.

These soils are moderately deep and moderately well drained. They are moderately eroded to severely eroded and have some gullied areas. Remnants of the original surface soil have been mixed with the upper part of the subsoil by plowing. The surface soil of the Oktibbeha soils has a reddish cast, and that of the Vaiden soils has a yellowish brown cast. The Oktibbeha and Vaiden soils have a firm, red to yellowish-brown clay subsoil that is very plastic when wet. These soils developed from a mantle of marine clay over Selma chalk.

These soils have moderately slow to slow permeability and infiltration. Their capacity for holding available moisture is moderately high. The natural fertility is low, but response to fertilizer is good. The reaction is strongly acid.

Use, suitability, and management.—About two-thirds of the acreage in these soils has been cleared and is used extensively for pasture, hay, and small grain. Most of the crops are used to feed dairy cattle and beef cattle. Most of the cash income for farms on these soils comes from the sale of dairy products and beef products.

The soils of this unit are best suited to pasture grasses, clovers, hay, and small grain. They are especially well suited to dallisgrass but are not well suited to row crops. Yields of most kinds of whiteclover are good if adequate fertilizer and lime are applied.

These soils need additions of fertilizer and large amounts of organic matter. Lime is needed at intervals. A cropping system that has 5 or 6 years of grasses and clovers followed by 1 or 2 years of small grain or sorghum will increase the organic matter and provide better aeration.

The soils of this unit need good pasture management. This management ought to provide weed control, suitable plants, and controlled grazing. The young pasture plants should be protected from trampling until they are well established.

Almost any kind of mechanized farm machinery can be used, but the use of this machinery is somewhat limited by gullies. These soils are not difficult to till when their moisture content is good. If they are plowed when extremely dry, however, they break into resistant clods.

CAPABILITY UNIT A3–IVs–1

Moderately well drained to excessively drained loamy fine sands with low capacity for holding moisture and plant nutrients

Klej loamy fine sand, compact substratum, 5 to 12 percent slopes.
Lakeland loamy fine sand, 5 to 12 percent slopes.

These soils are moderately deep or deep. They have a light grayish-brown to dark grayish-brown loamy fine

sand surface soil and a pale-yellow to light yellowish-brown loamy sand subsoil. The parent material was derived from thick beds of sand and loamy sand that are underlain by finer textured material. Although these soils are only slightly susceptible to sheet erosion, gullying is likely.

These soils are highly permeable and have a low to moderately low capacity for holding available moisture. They are low to very low in organic matter and natural fertility and have low productivity.

Use, suitability, and management.—Most of the acreage in this unit is in pasture. A small acreage is in peanuts, cotton, corn, and other row crops. Trees are on the steeper slopes.

If adequately fertilized, these soils are fairly well suited to coastal bermudagrass and bahiagrass.

If these soils are used for row crops, the row crops ought to be grown in a rotation that has a sod crop. A suitable rotation is 4 years of bahiagrass followed by 2 years of row crops. The row crops ought to be followed each year by a winter legume.

CAPABILITY UNIT A3-IVw-1

Somewhat poorly drained or poorly drained soils of variable texture on nearly level low stream terraces or flood plains

Bibb soils, local alluvium phases.
Byars and Myatt soils.
Chastain soils.
Leaf fine sandy loam.
Rains fine sandy loam.
Roanoke silt loam.
Sandy alluvial land, somewhat poorly drained.
Swamp.
Wehadkee silt loam.

These soils are nearly level and moderately deep or deep. They are variable in texture and color in the surface soil and the subsoil. The surface soil generally is dark-gray fine sandy loam or silt loam, and the subsoil is gray, mottled sandy clay loam, sandy clay, or silty clay loam.

These soils have moderate to slow permeability. Water stands on the surface in winter and early in spring. The natural fertility is moderately high to low, and the reaction is medium acid to strongly acid. Except where recently cultivated, most of these soils contain a moderate amount of organic matter in the surface soil.

Use, suitability, and management.—Less than one-half of the acreage in these soils has been cleared and is now mostly in pasture. Some of the cleared acreage is used for corn, but usually the yield is reduced by a wet period during the growing season.

Most of these soils are suited to pasture for summer grazing, but excessive wetness limits winter grazing. Drainage probably is not feasible in many areas. If these soils are used for pasture, fertilizer and lime should be applied. Pine trees grow well on most of these soils.

CAPABILITY UNIT A6-IVw-1

Nearly level, poorly drained, slowly permeable, fine-textured soils

Eutaw clay.
Eutaw fine sandy loam.
Geiger silty clay.
Geiger very fine sandy loam.

These soils are deep or moderately deep. They are in the prairie section on low stream terraces or in low positions on uplands. They are firm when dry and very plastic when wet. These soils have a very dark gray to very dark grayish-brown fine sandy loam to clay surface soil. Their subsoil is gray, intensely mottled clay. The underlying material is acid marine clay.

The soils of this unit have moderately slow to very slow infiltration and permeability and a moderately high capacity for holding available moisture. Runoff is slow. The natural fertility is moderately low to low, but response to fertilizer is good. The reaction is medium acid to strongly acid.

Use, suitability, and management.—About one-half the acreage has been cleared, and much of the uncleared area is woodland. The cleared acreage is used mostly for pasture but partly for hay. Suitable plants are dallisgrass, lespedeza, and johnsongrass. Because winter and spring are wet, small grain is not suitable. The crawfish chimneys that occur in some places make mowing the pasture difficult.

Shallow-ditch or dead-furrow drainage is economically feasible in many places. Deep-ditch drainage, however, is not always economically feasible. The lateral movement of water is slow in these soils, and fairly close spacing of ditches is needed for adequate drainage. The use of heavy farm machinery is hindered in winter and spring because of wetness.

CAPABILITY UNIT A3-VIe-1

Gently sloping to steep, strongly acid soils with moderate or severe erosion or shallow soils with excessive runoff

Boswell fine sandy loam, eroded gently sloping phase.
Boswell clay loam, severely eroded very gently sloping phase.
Cuthbert fine sandy loam, eroded gently sloping phase.
Cuthbert, Lakeland, and Boswell soils, eroded, 2 to 12 percent slopes.
Sawyer fine sandy loam, eroded sloping phase.
Sawyer sandy clay loam, severely eroded gently sloping phase.
Shubuta very fine sandy loam, eroded sloping phase.
Shubuta sandy clay loam, severely eroded gently sloping phase.
Shubuta-Cuthbert fine sandy loams, eroded sloping phases.
Shubuta-Cuthbert sandy clay loams, severely eroded gently sloping phases.
Susquehanna fine sandy loam, eroded nearly level phase.
Susquehanna fine sandy loam, eroded very gently sloping phase.
Wilcox clay loam, level phase.
Wilcox clay loam, eroded nearly level phase.

The soils of this capability unit vary greatly in slope, texture, and degree of erosion. These soils have slopes that range from 2 to 12 percent. The texture of the surface soil ranges from loamy sand to sandy clay loam. The texture of the subsoil ranges from sandy clay loam to clay. Erosion ranges from moderate to severe. The color of the surface soil varies greatly. Because of the difference in degree of erosion, some of the cleared areas have a very spotty appearance. In the more severely eroded areas, the color of the present surface soil is similar to that of the subsoil.

In many places, infiltration is slow and runoff is excessive. The permeability of the subsoil ranges from moderately slow to slow. These soils are low in natural fertility and are strongly acid.

Use, suitability, and management.—Much of the acreage is in pine trees. Some of the more nearly level and

less severely eroded areas of Wilcox and Susquehanna soils can be used safely for pasture. If managed carefully, some areas of the other soils in this unit also can be used for pasture. All of the soils are well suited to pine trees.

Good management that includes the selection of suitable pasture plants, additions of fertilizer and lime, and controlled grazing is needed on these soils. A permanent sod cover controls runoff and improves the physical characteristics of these soils.

Good forest management is also needed. This management should include selective harvesting, killing undesirable hardwoods, fire protection, and selecting trailways that do not induce gullying.

CAPABILITY UNIT A6–VIe–1

Gently sloping or sloping, severely eroded or gullied soils with excessive runoff, mostly calcareous clays

Gullied land, calcareous materials.
Sumter clay, severely eroded gently sloping phase.
Sumter-Oktibbeha-Vaiden clays, severely eroded gently sloping phases.
Sumter-Oktibbeha-Vaiden clays, severely eroded sloping phases.

These soils are moderately deep to deep and moderately well drained or well drained. In most places they have a gray clay surface soil. In some places the surface soil is red, reddish-brown, or yellowish-brown clay. The subsoil generally is gray to olive-gray clay, but, in some small patches, it is a red or yellowish-brown clay. The parent material was derived from Selma chalk in most areas. The soil material in these areas is moderately alkaline to highly alkaline. In a few small areas, the Selma chalk is capped with marine clays that range from a few inches to as much as 3 or 4 feet in thickness. These areas are part of the Sumter-Oktibbeha-Vaiden complex and are strongly acid.

These soils have slow infiltration and moderately slow or slow permeability. Runoff is very rapid, but capacity for holding available moisture is moderately high. During prolonged dry spells, these soils are hard and dry and have many cracks. They are severely eroded, and in many areas gullies have formed.

Use, suitability, and management.—Nearly all of the acreage in this capability unit has been cleared and is used mostly for pasture; some hay and small grain are also grown. Most of the cash income for farms on these soils comes from the sale of dairy products and beef.

These soils are suited to the same kind of crops as are the soils in capability unit A6–IVe–1, but use is restricted by slope and erosion. Most areas of Gullied land, calcareous materials, is best suited to grasses and legumes.

Many of the severely eroded areas can be made adequately productive. They can be smoothed with a bulldozer, then disked, fertilized, and seeded to small grain. After 2 or 3 years of small grain, these soils generally can be seeded to suitable pasture grasses and clovers. If adequate fertilizer and large amounts of organic matter are added, yields ought to be satisfactory in a few years.

These soils need to be kept under adequate vegetation at all times. The mulching of recently smoothed, formerly gullied areas helps to hold the soil in place until young plants are established. The young plants should be protected from trampling.

Grasses on these soils need a complete fertilizer, but the legumes need only phosphate and potash. The small areas of Oktibbeha and Vaiden soils need lime, but the size and location of these areas usually make liming impractical.

CAPABILITY UNIT A6–VIe–2

Gently sloping to steep, moderately well drained, acid loams and clays over Selma chalk

Oktibbeha fine sandy loam, eroded sloping phase.
Oktibbeha clay, severely eroded gently sloping phase.
Oktibbeha clay, severely eroded, 8 to 20 percent slopes.
Vaiden fine sandy loam, eroded sloping phase.
Vaiden silty clay, severely eroded gently sloping phase.

These soils have been moderately eroded or severely eroded, and some areas are gullied. Because much of the upper part of the subsoil has been mixed with remnants of the surface soil, the plow layer of these soils now has a yellowish or reddish cast. The subsoil consists of red to yellowish-brown clays that are firm when moist and very plastic when wet. The parent material was derived from marine deposits that overlie Selma chalk. These deposits are strongly acid, but the Selma chalk is alkaline. In most places, the depth to the Selma chalk ranges from 24 to 48 inches, but, in some areas, it is shallower.

These soils have slow infiltration and very rapid runoff. Permeability is moderately slow to slow, but the capacity for holding available moisture is moderately high. The natural fertility is low, but response to fertilizer is good.

Use, suitability, and management.—About one-half of the acreage has been cleared and is used mostly for pasture; some hay and small grain are grown. The rest is in forest, mainly pine.

These soils are well suited to pasture and hay, but they are not suited to row crops. Dallisgrass and johnsongrass are suitable plants. Fertilizer ought to be applied every year, and lime at longer intervals. Large amounts of organic matter are needed so that infiltration and permeability will be increased. Because the normal use of these soils for pasture and hay controls erosion, cropping systems are not often used. Pasture management ought to provide weed control, suitable plants, a good seedbed, and controlled grazing. Because of the gullies and the slope, the use of mechanized farm machinery is somewhat limited.

CAPABILITY UNIT A3–VIIe–1

Sloping to steep, mainly shallow soils that are moderately eroded to severely eroded or gullied

Amite sandy clay loam, severely eroded strongly sloping phase.
Boswell clay loam, severely eroded gently sloping phase.
Boswell clay loam, severely eroded, 8 to 20 percent slopes.
Cuthbert soils, severely eroded, 8 to 30 percent slopes.
Cuthbert, Lakeland, and Boswell soils, 12 to 30 percent slopes.
Cuthbert, Lakeland, and Boswell soils, eroded, 12 to 30 percent slopes.
Cuthbert, Lakeland, and Boswell soils, severely eroded, 12 to 30 percent slopes.
Gullied land, acid materials.
Lakeland loamy fine sand, 12 to 20 percent slopes.
Sawyer sandy clay loam, severely eroded sloping phase.
Shubuta sandy clay loam, severely eroded sloping phase.
Shubuta Cuthbert sandy clay loams, severely eroded sloping phases.
Shubuta-Cuthbert complex, eroded, 12 to 30 percent slopes.

Susquehanna fine sandy loam, eroded, 5 to 12 percent slopes. Terrace escarpments.

These are the steepest and most severely eroded soils in the county. Slopes range from 5 to 30 percent, but much of the acreage has slopes of 15 to 20 percent. Some areas are only moderately eroded; others have been almost destroyed by gullying. The surface soil ranges from sand and gravel to sandy clay loam, and the subsoil ranges from loamy sand to clay.

Much of the acreage has been mapped as complexes or as groups of undifferentiated soils. The Lakeland loamy fine sand, 12 to 20 percent slopes, is placed in this unit because its acreage is small and it occurs with other soils in this unit. If the acreage were larger, the Lakeland soil would be in a unit in subclass "s" rather than subclass "e."

The natural fertility is low, and the reaction is strongly acid. Except for the Lakeland soil, infiltration and permeability are low and runoff is extremely rapid.

Use, suitability, and management.—The soils in this unit make up about one-tenth of the county. Most of the acreage is in forest. A small acreage of the less severely eroded soils is in pasture or perennial hay. If used for pasture or hay, these soils ought to be managed like those in capability unit A3–VIe–1.

Pine trees are well suited to these soils, although the rate of growth is somewhat lower than that on more nearly level soils with better moisture relations. Forest management should provide selective harvesting, killing undesirable hardwoods, protecting against fire, and selecting trailways that do not induce gullying.

Estimated Yields

Average acre yields, estimated for principal crops grown in Montgomery County, are given for each soil in table 4.

In columns A are listed yields to be expected under the management now prevailing in the county, and in columns B, yields to be expected under good management. Good management is the highest level of management thought to be feasible without irrigation. In general, yields in columns B are notably higher than those in columns A. For some crops, however, especially those of high value, there is little or no difference in the yields given in columns A and columns B. This is because the prevailing, or average, management for these crops approaches the highest level of management thought to be feasible.

The yields given in columns A are based largely on observation made by members of the soil survey party, on information obtained through interviews with farmers and other agricultural workers who have had experience with the soils and crops of the area, and on comparisons with yield tables for other counties in Alabama that have soils similar to those in Montgomery County. Data giving specific crop yields for soils are not generally available, and the yields given in columns A are based on a summation of local experience. They are considered fairly reliable estimates of yields that may be expected under the management commonly practiced.

Good management, or the highest level of management thought to be feasible, requires: (1) The proper choice and rotation of crops; (2) correct use of commercial fertilizers, lime, and manure; (3) proper tillage; (4) return of organic matter to the soil; (5) adequate means for controlling excess water; (6) maintaining or improving productivity and workability; (7) conserving soil material, plant nutrients, and soil moisture; and (8) controlling insects and plant diseases. These requirements vary according to the soils, but the foregoing practices ought to be followed if the yields in columns B are to be obtained.

The yields in columns B are based largely upon estimates made by men who have had experience with the soils and crops of the county. Known deficiencies of the soils were considered, and then it was judged how much crop yields might increase if these deficiencies were corrected within practical limits. The yields in columns B may be considered as production goals, or as yields that may be obtained by using good management. By comparing yields in columns B with those in columns A, one may gain some idea of the response a soil will make if it receives good management. On practically all soils of the county, more intensive management will bring increased yields.

Also in table 4 are site indexes for species of pine that are grown commercially in Montgomery County. Site indexes are discussed in the subsection, Woodland Management.

Pasture Management

Pasture effectively and economically holds the soil in place and enriches it. It prevents a sloping soil from eroding. The soil under pasture becomes more productive when it is supplied with plant nutrients. Animals that are kept on pasture continuously return to the soil about three-fourths of the mineral matter in the forage they consume. The decaying grass roots add humus, and the humus, in turn, helps to convert the raw minerals in the soil to forms that plants can use. In addition, the grass adds to the development of a granular structure that is favorable for plant growth.

The management of pasture in Montgomery County, as well as in other areas, ought to provide lime, phosphate, potash, and other minerals. The amounts of these amendments can be determined best by soil tests. These amendments should be applied in sufficient quantities so that pasture plants can grow enough to cover and protect the soil and provide forage for livestock. Also, the number of livestock and the periods of grazing should be regulated so that the pasture plants can grow vigorously during the grazing season.

Selecting land for pasture

All the land on a farm cannot be kept in pasture at all times. It may be advisable to keep certain areas permanently in pasture, to convert other areas from cropland to pasture, and to build up areas of abandoned cropland so that they can be used for pasture. The extent to which pasture should be used in a rotation with cultivated crops should be determined.

Many things must be considered in selecting soils that are to be used for pasture. Knowing the capability class of the soils is helpful. Soils that are suited to cultivation (classes I to IV) are usually suited to pasture. If a soil is fertile enough to have moderate to high yields

TABLE 4.—*Estimated acre yields of principal crops under*

[Yields in columns A are obtained under prevailing management; those in columns B are obtained under best management thought to be

Soil	Capability unit	Cotton (lint)		Corn		Johnsongrass (hay)		Alfalfa (hay)	
		A	B	A	B	A	B	A	B
		Lbs.	*Lbs.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*
Altavista very fine sandy loam	B10 I 1	275	500	20	45	0.5	1.0		
Amite fine sandy loam:									
Level phase	A3 I–1	400	700	30	60	1.2	2.5	2.5	4.0
Eroded very gently sloping phase	A3–IIe–1	325	650	25	55	1.0	2.0	2.0	3.5
Eroded gently sloping phase	A3–IIIe–1	300	650	25	55	1.0	2.0	2.0	3.5
Eroded sloping phase	A3 IVe 1	275	625	20	40	1.0	2.0		
Amite sandy clay loam:									
Severely eroded gently sloping phase	A3 IVe 1	200	500	15	35	.8	1.5	1.5	3.0
Severely eroded sloping phase	A3–IVe–1	200	500	10	30	.7	1.5		
Severely eroded strongly sloping phase	A3 VIIe–1								
Augusta silt loam and fine sandy loam	A3 IIIw–2			10	25				
Bibb soils, local alluvium phases	A3–IVw–1			10	35				
Boswell fine sandy loam:									
Eroded nearly level phase	A3–IIIe–3	220	400	15	30	.7	1.5		
Eroded very gently sloping phase	A3–IVe–2	200	400	15	30	.7	1.5		
Eroded gently sloping phase	A3–VIe–1								
Boswell clay loam:									
Severely eroded nearly level phase	A3–IVe–2	175	375	12	25	.6	1.4		
Severely eroded very gently sloping phase	A3–VIe–1								
Severely eroded gently sloping phase	A3 VIIe–1								
Severely eroded, 8 to 20 percent slopes	A3–VIIe–1								
Bowie fine sandy loam:									
Very gently sloping phase	A3–IIe–3	300	600	25	45				
Level phase	A3–IIe 3	300	600	25	45				
Eroded very gently sloping phase	A3–IIIe–3	275	575	20	40				
Eroded gently sloping phase	A3–IVe–2	250	520	20	40				
Eroded very gently sloping thin solum phase	A3 IIIe 3	200	400	15	30				
Eroded gently sloping thin solum phase	A3–IVe–2	200	400	15	30				
Byars and Myatt soils	A3–IVw–1								
Cahaba fine sandy loam:									
Level phase	A3–I–1	375	650	25	50	1.0	1.5		2.0
Eroded very gently sloping phase	A3–IIe–1	350	625	20	45	.7	1.3		1.5
Eroded gently sloping phase	A3–IIIe–1	325	600	20	45	.7	1.3		
Catalpa clay	A6 IIw 1			35	75	1.7	3.0		
Chastain soils	A3–IVw–1			10	35				
Chewacla silt loam	A3 IIIw–1			25	60	1.0	2.0		
Congaree silt loam	A3–IIw–2			45	75	1.5	2.5	1.8	3.0
Congaree fine sandy loam	A3–IIw–2			45	75	1.5	2.5	1.8	3.0
Cuthbert fine sandy loam, eroded gently sloping phase	A3 VIe 1								
Cuthbert soils, severely eroded, 8 to 30 percent slopes	A3–VIIe–1								
Cuthbert, Lakeland, and Boswell soils:									
Eroded, 2 to 12 percent slopes	A3–VIe–1								
12 to 30 percent slopes	A3–VIIe–1								
Eroded, 12 to 30 percent slopes	A3–VIIe 1								
Severely eroded, 12 to 30 percent slopes	A3–VIIe–1								
Eutaw clay	A6–IVw–1			15	25	1.0	1.5		
Eutaw fine sandy loam	A6–IVw–1			15	25	1.0	1.5		
Flint fine sandy loam:									
Level phase	A3–IIe–2	225	400	20	40	1.0	1.5		
Eroded very gently sloping phase	A3–IIIe–2	200	375	15	35	.8	1.4		
Eroded gently sloping phase	A3 IVe–2	200	375	15	35	.8	1.4		
Geiger silty clay	A6–IVw–1			15	25	1.0	1.5		
Geiger silty clay, overwash variant	A6–IIIw–2			30	60	1.5	2.5		
Geiger very fine sandy loam	A6–IVw–1			15	25	1.0	1.5		
Gullied land, acid materials	A3–VIIe–1								
Gullied land, calcareous materials	A6 VIe 1								
Houston clay, eroded nearly level phase	A6–IIe–3	300	550	30	60	1.7	2.8	2.5	3.5
Huckabee loamy sand, 0 to 5 percent slopes	A3–IIs–1	200	450	20	40				
Independence loamy sand, 0 to 5 percent slopes	A3–IIs–1	200	450	20	40				
Iuka soils (general alluvium)	A3–IIw–2			25	60	1.0	2.0		
Iuka soils, local alluvium phases	A3–IIw–1	250	500	25	60	1.0	2.0		
Izagora fine sandy loam:									
Level phase	A3 IIIw 2	250	400	20	40	.5	1.0		
Very gently sloping phase	A3–IIIw–2	200	400	20	40	.5	1.0		
Eroded gently sloping phase	A3–IIIw–2	175	375	15	35	.4	1.0		
Kaufman clay loam	A6–IIw–1			35	75	1.5	2.5		
Kipling silty clay	A6–IIIw–3	200	400	20	40	1.0	2.0		

See footnotes at end of table.

two levels of management and site indexes for species of pine

feasible for most farmers in the county. Absence of yield data indicates that the soil is poorly suited to crop or is not commonly planted to it]

Oats and legumes (hay)		Oats (grain)		Wheat		Peanuts		Pasture [1]		Site index for pine trees [2]			
A	B	A	B	A	B	A	B	A	B	Loblolly	Slash	Longleaf	Shortleaf
Tons	*Tons*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Lbs.*	*Lbs.*	*Cow-acre-days* [3]	*Cow-acre-days* [3]				
0.7	1.5	20	35	10	18	800	1,400	75	150	85			65
1.3	2.5	35	65	22	33	1,100	2,000	100	200	90	80	75	75
1.0	2.0	30	60	20	30	1,000	1,900	90	185	85	80	75	75
.8	1.8	30	60	20	30	950	1,850	85	180	85	80	75	75
.7	1.5	25	50	18	28	900	1,800	80	170	80	75	70	70
.7	1.5	25	50	17	28			65	150	75	70	65	65
.6	1.4	20	40	12	23			60	140	75	70	65	65
								50	125	70	60	60	60
.5	1.0	12	25					60	150	95	85	85	
								50	125	110	100		
.6	1.3	20	35	12	23	700	1,200	75	160	90	85	85	75
.5	1.2	15	30	10	20	700	1,200	70	150	90	85	85	75
					20	650	1,100	70	150	85	80	80	70
.4	1.6	15	30	10	20			65	140	70	60	60	60
								60	135	70	60	60	60
								50	110	70	60	60	60
								45	100	65	55	55	60
.8	1.7	25	40	15	25	1,100	2,000	75	150	90	85	80	80
.8	1.7	25	40	15	25	1,100	2,000	75	150	90	85	80	80
.7	1.5	20	35	12	23	950	1,800	70	145	85	80	75	80
.7	1.5	20	35	12	23	900	1,800	65	140	85	80	75	80
.6	1.3	18	30	12	22	700	1,400	60	140	75	70	65	70
.6	1.3	18	30	12	22	700	1,400	55	130	75	70	65	70
								60	150	100	85	70	
1.1	2.0	30	60	20	30	1,200	2,100	85	175	90	80	75	65
1.0	1.7	25	50	17	28	1,100	1,950	75	160	85	75	70	60
.8	1.5	25	50	17	28	1,050	1,900	70	155	85	75	70	60
								120	240				
								70	160	100	90	70	
1.2	2.0	25	45	12	25			110	200	105	95	80	
1.5	2.5	30	60	18	30			125	250	105	95	80	
1.5	2.5	30	60	18	30			125	250	105	95	80	
								50	100	80	75	70	75
										55	50	45	45
								50	100	65	55	50	50
										65	55	50	50
										60	50	45	45
										50	45	40	45
								70	150	90	85		80
								70	150	90	85		80
.7	1.5	20	35	12	25	750	1,250	75	160	90	85	75	85
.6	1.4	18	35	10	25	650	1,150	70	150	85	80	70	80
.6	1.4	18	35	10	25	650	1,150	65	140	85	80	70	80
.5	1.0	15	25					70	150	90	85		80
1.0	1.5	25	55	15	25			100	200				
.5	1.0	15	25					70	150	90	85		80
										(4)	(4)	(4)	(4)
1.0	1.5	25	50	15	25			80	170				
						900	1,500	50	125	90	80	70	
						900	1,500	50	125	90	80	70	
1.2	2.0	25	45	12	25			120	240	115	105	95	
1.0	1.8	25	50	12	25	1,000	1,600	110	200	110	100	90	
.5	.8	15	30	10	18	700	1,200	75	150	100	90	70	90
.5	.8	15	30	10	18	700	1,200	75	150	100	90	70	90
.4	.7	12	25	8	17	600	1,050	65	140	95	85	65	85
								110	230				
.5	.8	15	25					75	150	100	90	70	90

TABLE 4.—*Estimated acre yields of principal crops under two*

Soil	Capability unit	Cotton (lint)		Corn		Johnsongrass (hay)		Alfalfa (hay)	
		A	B	A	B	A	B	A	B
		Lbs.	*Lbs.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*
Kipling very fine sandy loam:									
Level phase	A6–IIIw–3	200	400	20	40	1.0	2.0		
Eroded nearly level phase	A6–IIIw–3	175	375	15	35	.8	1.8		
Klej loamy fine sand:									
Compact substratum, 0 to 5 percent slopes	A3–IIs–1	200	400	20	40				
Compact substratum, 5 to 12 percent slopes	A3–IVs–1	175	375	15	35				
Lakeland loamy fine sand:									
0 to 5 percent slopes	A3–IIs–1	200	450	20	40				
5 to 12 percent slopes	A3–IVs–1	175	400	15	35				
12 to 20 percent slopes	A3–VIIe–1								
Leaf fine sandy loam	A3–IVw–1			15	25	.8	1.4		
Leeper silty clay	A6–IIw–1			25	60	1.3	2.4		
Mantachie soils	A3–IIIw–1			25	60	1.0	2.0		
Mixed alluvial land	A6–IIIw–1			15	35	1.2	2.3		
Mixed local alluvial land	A6–IIIw–1			10	25	1.0	2.0		
Ochlockonee silt loam	A3–IIw–2			45	75	1.5	3.0		
Oktibbeha clay:									
Eroded nearly level phase	A6–IIe–2	200	400			1.0	2.0		
Eroded very gently sloping phase	A6–IIIe–2	200	400			1.0	2.0		
Severely eroded very gently sloping phase	A6–IVe–2	150	300			.7	1.6		
Eroded gently sloping phase	A6–IVe–2	150	300			.7	1.6		
Severely eroded gently sloping phase	A6–VIe–2					.6	1.5		
Severely eroded, 8 to 20 percent slopes	A6–VIe–2								
Oktibbeha fine sandy loam:									
Eroded nearly level phase	A6–IIe–2	220	400	15	30	1.0	2.0		
Eroded very gently sloping phase	A6–IIIe–2	220	400	15	30	1.0	2.0		
Eroded gently sloping phase	A6–IVe–2	175	375	15	30	.8	1.8		
Eroded sloping phase	A6–VIe–2					.7	1.6		
Pheba very fine sandy loam	A3–IIIw–2	125	300	20	35				
Prentiss very fine sandy loam:									
Level phase	A3–IIe–3	275	500	25	50				
Eroded very gently sloping phase	A3–IIe–3	275	500	25	50				
Rains fine sandy loam	A3–IVw–1								
Roanoke silt loam	A3–IVw–1								
Ruston fine sandy loam:									
Eroded very gently sloping phase	A3–IIe–1	375	650	25	50	.8	1.5		2.0
Eroded gently sloping phase	A3–IIIe–1	350	625	20	45	.6	1.3		1.5
Eroded sloping phase	A3–IVe–1	325	600	15	40	.5	1.2		
Sandy alluvial land, somewhat poorly drained	A3–IVw–1			10	30				
Sawyer fine sandy loam:									
Very gently sloping phase	A3–IIe–3	250	475	20	40	.7	1.4		
Eroded very gently sloping phase	A3–IIIe–3	225	450	15	35	.6	1.3		
Eroded gently sloping phase	A3–IVe–2	200	450	15	35	.6	1.3		
Eroded sloping phase	A3–VIe–1								
Sawyer sandy clay loam:									
Severely eroded gently sloping phase	A3–VIe–1								
Severely eroded sloping phase	A3 VIIe–1								
Shubuta very fine sandy loam:									
Eroded very gently sloping phase	A3–IIIe–3	325	575	20	45	.6	1.3		
Very gently sloping phase	A3–IIe–3	350	600	25	50	.8	1.5		
Eroded gently sloping phase	A3–IVe–2	300	550	20	45	.5	1.3		
Eroded sloping phase	A3 VIe–1								
Shubuta sandy clay loam:									
Severely eroded gently sloping phase	A3–VIe–1								
Severely eroded sloping phase	A3–VIIe–1								
Shubuta-Cuthbert fine sandy loams:									
Eroded very gently sloping phases	A3 IIIe–3	200	400	20	40	.4	1.0		
Eroded gently sloping phases	A3–IVe–2	175	350	20	40	.4	1.0		
Eroded sloping phases	A3–VIe–1								
Shubuta-Cuthbert sandy clay loams:									
Severely eroded gently sloping phases	A3–VIe–1								
Severely eroded sloping phases	A3 VIIe–1								
Shubuta-Cuthbert complex, eroded, 12 to 30 percent slopes	A3–VIIe–1								
Stough fine sandy loam	A3–IIIw–2	150	300	15	35				

See footnotes at end of table.

levels of management and site indexes for species of pine—Continued

Oats and legumes (hay)		Oats (grain)		Wheat		Peanuts		Pasture [1]		Site index for pine trees [2]			
A	B	A	B	A	B	A	B	A	B	Loblolly	Slash	Longleaf	Shortleaf
Tons	*Tons*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Lbs.*	*Lbs.*	*Cow-acre-days* [3]	*Cow-acre-days* [3]				
0.5	0.8	15	25					75	150	100	90	70	90
.4	.7	12	25					70	140	95	85	65	85
						950	1,600	50	120	85	80	65	80
						900	1,500	45	110	80	75	60	75
						950	1,600	50	120	90	80	70	80
						900	1,500	45	110	90	80	70	80
										85	75	65	75
.5	1.0	15	25					75	150	100	90	70	90
								120	240				
								85	180	110	100	95	
.5	1.0	20	35					85	190				
								80	175				
1.5	2.5	30	60	15	30			125	250	110	100	95	
.8	1.8	25	45	12	25			80	170	80	75		75
.8	1.8	25	45	12	25			80	170	80	75		75
.7	1.5	20	35	10	20			70	155	65	55		55
.8	1.8	25	45	12	25			75	160	80	75		75
								65	145	65	55		55
								55	135	60			50
.8	1.8	25	45	12	25	600	1,100	80	170	80	75		75
.8	1.8	25	45	12	25	600	1,100	80	170	80	75		75
.8	1.8	25	45	12	25	550	1,100	75	160	80	75		75
								70	150	75	70		70
						900	1,500	50	120	95	85	70	
1.0	1.8	25	50	10	25	850	1,500	65	150	85	80		80
1.0	1.8	25	50	10	25	850	1,500	65	150	85	80		80
								50	110	100	90	70	90
								50	125	90	85	75	85
1.2	2.0	30	60	20	30	1,200	2,050	85	170	90	85	65	85
1.0	1.8	25	55	18	28	1,100	1,950	75	155	85	80	60	80
1.0	1.8	20	50	17	25	1,050	1,900	70	150	85	80	60	80
								50	150	100	95		
.7	1.4	25	40	10	20	700	1,200	80	170	90	85	75	85
.6	1.2	20	35	10	18	650	1,150	75	160	85	80	70	80
.6	1.2	20	35	10	18	650	1,150	75	160	85	80	70	80
								70	150	85	80	70	80
								60	130	70	65	60	60
								55	125	70	65	60	60
.8	1.6	25	50	13	25	750	1,300	75	170	80	75	70	75
1.0	1.8	30	55	15	25	800	1,400	80	175	85	80	75	80
.8	1.6	25	50	13	25	700	1,250	70	170	80	75	70	75
								65	160	80	75	70	75
								60	140	75	70	60	70
								50	130	75	70	60	70
.5	1.0	15	35	10	20			60	130	75	70	60	70
.5	1.0	15	35	10	20			55	125	75	70	60	70
					18			50	125	70	65	55	65
								50	125	65	60	50	60
								45	110	65	60	50	60
										65	60	50	60
.4	.8	15	25			750	1,300	50	120	90	85	75	85

TABLE 4. *Estimated acre yields of principal crops under two*

Soil	Capability unit	Cotton (lint)		Corn		Johnsongrass (hay)		Alfalfa (hay)	
		A	B	A	B	A	B	A	B
		Lbs.	*Lbs.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*
Sumter clay:									
Eroded nearly level phase	A6–IIe–1			15	35	1. 8	2. 8	2. 5	4. 5
Severely eroded nearly level phase	A6–IIIe–1					1. 2	2. 2	2. 0	4. 0
Eroded very gently sloping phase	A6–IIIe–1			15	35	1. 5	2. 5	2. 2	4. 3
Severely eroded very gently sloping phase	A6–IVe–1					1. 2	2. 2	2. 0	4. 0
Eroded gently sloping phase	A6–IVe–1			10	30	1. 4	2. 3	2. 2	4. 3
Severely eroded gently sloping phase	A6–VIe–1					1. 0	2. 0		
Sumter-Oktibbeha-Vaiden clays:									
Eroded nearly level phases	A6–IIe–1			15	35	1. 2	2. 4	2. 2	4. 0
Eroded very gently sloping phases	A6–IIIe–1			15	35	1. 2	2. 3	2. 2	4. 0
Severely eroded very gently sloping phases	A6–IVe–1					1. 0	2. 0	1. 9	3. 7
Eroded gently sloping phases	A6–IVe–1			10	30	1. 2	2. 2	2. 0	3. 8
Severely eroded gently sloping phases	A6–VIe–1					1. 0	2. 0		
Severely eroded sloping phases	A6–VIe–1					1. 0	2. 0		
Susquehanna fine sandy loam:									
Eroded nearly level phase	A3–VIe–1								
Eroded very gently sloping phase	A3–VIe–1								
Eroded, 5 to 12 percent slopes	A3–VIIe–1								
Swamp	A3–IVw–1				35		2. 0		
Terrace escarpments	A3 VIIe–1								
Tuscumbia silty clay	A6–IIIw–2			15	40	1. 3	2. 3		
Tuscumbia fine sandy loam	A6–IIIw–2			15	40	1. 3	2. 5		
Una clay	A6–IIIw–1			10	30	1. 0	2. 0		
Vaiden fine sandy loam:									
Level phase	A6–IIe–2	250	450	20	40	1. 2	2. 3		
Nearly level phase	A6–IIe–2	250	450	20	40	1. 2	2. 3		
Eroded nearly level phase	A6–IIe–2	225	400	15	35	1. 0	2. 0		
Eroded very gently sloping phase	A6–IIIe–2	225	400	15	35	1. 0	2. 0		
Eroded gently sloping phase	A6–IVe–2	200	375	12	30	1. 0	2. 0		
Eroded sloping phase	A6–VIe–2					. 8	1. 8		
Vaiden silty clay:									
Level phase	A6–IIe–2	250	450	20	40	1. 2	2. 3		
Nearly level phase	A6–IIe–2	250	450	20	40	1. 2	2. 3		
Eroded nearly level phase	A6–IIe–2	225	400	15	33	1. 0	2. 0		
Eroded very gently sloping phase	A6–IIIe–2	225	400	15	35	1. 0	2. 0		
Severely eroded very gently sloping phase	A6–IVe–2	175	300	10	30	. 8	1. 8		
Eroded gently sloping phase	A6–IVe–2	200	350	15	35	1. 0	2. 0		
Severely eroded gently sloping phase	A6–VIe–2					. 7	1. 6		
Waugh fine sandy loam:									
Level phase	A3–IIe–2	300	575	25	50	1. 0	2. 0		
Eroded very gently sloping phase	A3–IIIe–2	275	550	20	45	. 8	1. 8		
Wehadkee silt loam	A3–IVw–1								
West Point clay:									
Level phase	A6–IIe–3	350	600	35	65	2. 0	3. 0	2. 0	3. 0
Nearly level phase	A6–IIe–3	350	600	35	65	2. 0	3. 0	2. 5	3. 5
Wickham fine sandy loam:									
Level phase	B10–I–1	350	625	30	60	1. 0	2. 0	1. 0	2. 5
Eroded very gently sloping phase	A3–IIe–1	325	600	25	55	. 8	1. 8	. 8	2. 3
Eroded gently sloping phase	A3–IIIe–1	300	575	20	50	. 8	1. 8	. 8	2. 3
Wickham silt loam	B10–I–1	350	625	30	60	1. 2	2. 4	1. 0	2. 5
Wilcox clay loam:									
Level phase	A3–VIe–1					. 8	1. 6		
Eroded nearly level phase	A3–VIe–1					. 7	1. 5		

[1] Average of all pasture grasses and legumes commonly grown in county.

[2] Site index is the average height of trees in feet at age of 50 years.

[3] Cow-acre-days is the number of days in a year a mature animal (cow, steer, or horse) can graze 1 acre without injury to the pasture.

[4] Variable.

of cultivated crops, it can profitably produce enough forage for grazing and enough cover for protection against rain and wind. On some farms where all the land is suited to cultivation, part is used permanently for pasture. Other pastures ought to be plowed up regularly and rotated with cultivated field crops. This will reduce the number of parasites and thereby increase the yield of livestock. The time that a soil should be kept in grass may depend on the degree of erosion of the soil and the need of the soil for protective vegetation.

Many areas of poorly drained wasteland can be profitably cleared, fertilized, and seeded to pasture. Areas of infertile, eroded upland, however, generally can be used more profitably for woodland than for pasture.

Some soils have been cleared that were never cultivated or were cultivated only long enough to have a stand of grass established. These soils are generally so low in fertility and so steep and erodible that it is difficult to

levels of management and site indexes for species of pine Continued

Oats and legumes (hay)		Oats (grain)		Wheat		Peanuts		Pasture [1]		Site index for pine trees [2]			
A	B	A	B	A	B	A	B	A	B	Loblolly	Slash	Longleaf	Shortleaf
Tons	*Tons*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Lbs.*	*Lbs.*	*Cow-acre-days* [3]	*Cow-acre-days* [3]				
1.0	1.7	30	55	17	30			85	180				
.8	1.6	25	50	15	28			70	170				
1.0	1.7	30	55	17	30			75	175				
.8	1.6	25	50	15	28			65	160				
1.0	1.7	30	55	17	30			70	170				
								60	155				
1.0	1.7	25	50	15	28			85	180				
1.0	1.7	25	50	15	28			75	175				
.8	1.6	20	45	12	22			65	160				
1.0	1.7	25	50	15	25			70	170				
								60	150				
								55	145				
								70	165	85	80	65	75
								70	165	85	80	65	75
								60	150	80	75	60	70
									200				
										[4]	[4]	[4]	
								100	200				
								100	200				
								100	200				
.8	1.8	25	45	15	25	700	1,200	85	180	85	80		80
.8	1.8	25	45	15	25	700	1,200	85	180	85	80		80
.7	1.7	25	40	15	23	700	1,200	80	170	85	80		80
.7	1.7	25	40	15	23	700	1,200	70	165	85	80		80
.7	1.7	25	40	15	23	650	1,150	65	160	85	80		80
								55	150	80	75		75
.8	1.8	25	45	15	22			85	180	85	80		80
.8	1.8	25	45	15	22			85	180	85	80		80
.7	1.6	20	40	12	20			75	175	80	75		75
.7	1.6	20	40	12	20			70	170	80	75		75
.6	1.4	18	35					60	160	75	70		70
.7	1.6	20	40	10	18			65	160	80	75		75
.5	1.2	18	35					50	150	75	70		70
.7	1.5	20	35	12	22	900	1,550	75	160	90	88		85
.6	1.4	18	35	10	18	800	1,400	65	150	85	80		80
								45	140	95			85
1.2	1.7	25	55					125	250				
1.3	1.8	30	60					125	250				
1.1	2.0	30	60	15	25	900	1,750	85	175	85			80
1.0	1.7	25	50	12	22	850	1,700	75	165	80			75
1.0	1.7	25	50	12	22	800	1,650	70	160	80			75
1.1	2.0	30	60	15	25	800	1,600	85	175	85			80
								70	165	85	80		75
								70	165	80	75		70

maintain a sod that is good enough to protect them from erosion. Nevertheless, many areas of the more clayey soils can be restored or maintained if they are adequately managed. This management ought to include adding fertilizer, regulating grazing, controlling weeds and brush, and protecting from fire. Disking or plowing may be necessary to establish a stand of desirable plants, but the soil must not be too steep, rough, or rocky.

Choice of pasture plants

A combination of legumes and grasses will give the best pasture stands. In most places in the county, the combination needs to consist of only one legume and one grass. The legume improves the quality of the forage and, by adding nitrogen, improves the soil as well. Grass may help to control bloat in livestock.

Seedbed preparation, fertilization, and seeding

Seedbed preparation, fertilization, and seeding are related operations. A good, firm seedbed ought to be prepared and the seed only lightly covered. This is because the seed of most suitable pasture plants is small and the young seedling is weak.

After the seedbed is prepared, fertilizer and lime ought

to be added as indicated by the results of soil tests. Then the soil should be lightly disked. Lime is not needed on the alkaline soils in the prairie section, or black belt. Apply phosphate, potash, and nitrogen if the pasture is grass. Legume pasture does not need nitrogen in the fertilizer.

After the seed has been broadcast, one of the best ways of covering it is to run a cultipacker over the soil. If a cultipacker is not available, use an ordinary spiketooth or drag harrow. The stand will be better and more uniform if the seed is drilled than if it is broadcast. Seeding and covering can be done in one operation if the seeds are the kind that can flow through the drill.

Conserving water

The establishment and maintenance of pasture may be hindered by the lack of enough well-distributed rainfall for adequate plant growth. Before a good sod is formed, the loss of water through runoff may be so great that soil moisture is deficient in periods of drought. The effect of drought, even on old pastures, is first apparent on slopes that lose much of the rainfall through runoff. Small contour furrows help to reduce runoff and thus conserve the rainfall and increase the moisture content of the soil. Mulches and surface residue may also be used to conserve water.

Treatment of newly seeded pasture

Newly seeded pasture must be managed with care. The young seedlings ought to be protected until they have developed a good root system that can withstand drought, freezing weather, and having the pasture plants cropped by livestock. If many weeds appear after the spring seeding, it may be necessary to clip the weeds before grazing is started. The grazing should be light the first year and moderate after the grass is well started.

Cultivating and reseeding old pastures

Cultivating old pastures does little good unless the pasture is reseeded or fertilized, or both, when it is cultivated. Cultivation alone cannot bring back desirable plants that were formerly in a stand. If the pasture is jointly cultivated, fertilized, and reseeded, the weeds are eliminated, the seeds are covered, and the fertilizer is mixed with the soil. Fast-growing grasses and legumes seeded on old pasture that has been well disked and fertilized provide good grazing a short time after they are seeded. These plants will continue to produce forage while the slower growing, more permanent grasses are being established.

Controlling weeds and brush

One of the best ways to control weeds is to increase the fertility of the soil, for grasses generally dominate if conditions for plant growth are favorable. Another good method of controlling weeds is mowing the weeds at the proper time. Generally, weeds ought to be mowed before their seed has formed. Some weeds should be mowed twice a year.

The sprouts of shrubs and trees can be controlled best by cutting them at the proper time. Apparently, the best time to cut brush is when the roots contain the smallest amount of starch. This is usually when the plants bloom.

Woodland Management

One of the main purposes of woodland management is to protect the forest site and its environs, including the area below the site in the watershed, from excessive runoff and soil erosion. The loosely thatched forest canopy gives the first protection, but the blanket of litter and humus on top of the ground gives the most.

The litter and humus do more than protect the soil against runoff and erosion. They make the soil more permeable and keep the soil moist and absorbent, even in winter when the exposed soil is frozen. Organic material from the litter makes the soil more porous and improves tilth. In addition, the litter and the humus derived from the litter are the habitat for the vast number of organisms that assist in the formation of soils and that increase the capacity for storing water.

Good woodland management ought to provide (1) protection from fire and from trampling of young trees by livestock, (2) systematic culling and harvesting, (3) maintenance of a full stand of desirable species, (4) planting selected areas that are not naturally reproductive, and (5) managing native forage plants in the wooded areas.

Control of fires is essential for good tree growth, soil porosity, and erosion control. If grazing is uncontrolled, the natural reproduction of trees is slowed and stands of undesirable species may prevail. Excessive trampling damages the stands, compacts the soil, and destroys the humus.

In the forests of Montgomery County there are many cull trees and undesirable species. If these are removed, desirable species grow faster. Most cull trees can be used for pulp wood or fuel. Many of the areas that are mostly in hardwoods have sufficient pines to establish a stand by natural reproduction if the blackjack oak and other undesirable trees are removed or killed.

In selective harvesting, the forest is thinned systematically. Enough distance is left between the remaining trees so that they can obtain maximum growth and yet allow a periodic cutting cycle. For the trees that grow into final crop timber, and for the seed trees for natural reproduction, it is important to select tall, straight, well-crowned trees that are free from disease or defect.

Trees rarely reproduce naturally in sufficient numbers or in sufficiently uniform distribution for the most economical use of the land. Planting to thicken existing stands is often necessary. Trees should also be planted on many of the steep, severely eroded areas.

Fire protection

Protection against fires is the most important step in forest management. Fire may cause minor damage or the complete destruction of the trees. It also destroys the organic mantle that is important in conserving the soil and the moisture in the soil. It destroys the young trees and saplings and the shrubs and herbs, which are useful in protecting the site. Even the larger trees are killed by fire, and soon they are useless for protection or for products. The reproduction of the trees is sometimes prevented. Good trees may be replaced by undesirable species that are more resistant to fire but are less valuable on the market. If the larger trees are not

killed, their rate of growth is retarded and they are scarred and weakened. Then insects and fungi make them either unsalable or of little value.

Forest stands are also reduced by repeated superficial fires. These fires have converted forests of valuable species into fields of brush or into ragged stands of unmarketable trees. Frequently, the problem of protection against future fires is intensified by the effects of past fires.

Improvement cutting

Improvement cutting is the first cutting generally needed when second-growth forest or partly harvested virgin forest is placed under management. All forests contain trees that are not paying their way and are not likely to do so. These trees should be removed in improvement cutting to the extent that they can be removed without leaving large holes in the forest canopy.

Trees that should be removed by improvement cutting are (1) large-crowned and coarsely branched trees that take up more than their fair share of the forest space and thereby hinder the growth of valuable smaller trees; (2) trees that have such poor form, slow growth, damage, or disease that they will not improve if given additional time to grow; (3) suppressed trees not likely to live until the next cutting; (4) trees that crowd other trees and thereby cause the growth of all to be reduced; (5) relatively poor trees that are not needed for seed trees and are declining rather than increasing in value; and (6) trees of undesirable species.

In some places undesirable hardwoods ought to be killed by girdling or poisoning rather than by cutting. This is especially true if the trees are of low or no market value or if, when they fall, they will seriously damage valuable young trees.

A tree that is to be cut or girdled usually should be marked in advance by a trained man or under his supervision. Improvement cutting generally produces enough products to pay for the cutting, although the products are of low quality. The resulting benefit to future production, therefore, is a net gain. After a stand is in good growing condition and contains mature crop trees, improvement cutting should be combined with the periodic harvest of crop trees.

Thinning

Forest stands, especially where the trees are about the same age, frequently are so dense that the growth of even the most desirable trees is impaired. Then a particular kind of improvement cutting called thinning is needed.

Forest stands that are naturally reproduced often start with many thousands of seedlings per acre, but have only 50 to 250 grown trees at maturity. This great reduction comes about naturally. The competition among trees is beneficial up to a certan point, for it encourages the development of good form and the natural pruning of side branches. But the competition also reduces the growth of even the successful competitors, and the successful competitors are not necessarily the trees that yield the most profit.

The purpose of thinning is to retain all advantage of density and to reduce the disadvantages. If thinning is needed, it is generally begun as soon as the material removed will pay for the cost of the thinning. It is repeated as needed. Sometimes the thinning of trees that are below useful size is advisable as an investment in future production.

The trees to be removed should be selected and marked in advance by a competent person. The aim is to maintain the maximum number of trees so that all the productive capacity of the soil will be used.

Harvesting

Ideal harvesting combines the selective cutting of scattered trees that have reached economic maturity and the selective cutting of those that are cut for stand improvement or for salvage purposes.

Selective cutting is generally more profitable than clear cutting to the forest owner. Only about half of the total volume of wood produced in a stand of trees during its lifetime is present at maturity. The other half may be lost through suppression, disease, insect activity, and other causes of damage. Much of the volume that would be lost is saved through selective cutting. Even though this wood is often inferior, it is used and the quality and total volume of the stand is increased. Selective cutting also provides income and products at frequent intervals, thereby helping the owner and stabilizing local wood-using industries.

Selecting suitable trees for soils

Knowing the rate of growth of a species of tree on a particular soil will assist the farmer in selecting the proper trees for his soils. This rate of growth is indicated by a site index. A site index is the average height in feet that a tree attains in 50 years. Table 4 gives, for each soil, the site index of the species of pines that are grown commercially in Montgomery County. Readings to obtain these site indexes were taken on sites that had uniform stands and growth and did not receive more than normal woodland management.

The site indexes would be greater on areas where (1) species were planted on the most suitable soil, (2) the stand was selectively cut and thinned, and (3) the stand was protected from fire and grazing. Generally, pine trees grow best on deep, very friable, very moist, uneroded soils.

Native forage plants and their management

Table 5 gives the principal soils, original vegetation, and the general productivity of the native forage plants on four kinds of physiographic areas. Native forage is used to supplement pasture and feed crops.

The prairie areas in the black belt have been converted to tame pasture and cropland long ago. Remnants of grassland that contain some of the original plants are in scattered areas and adjacent woodlands.

Native forage plants are in the uplands that support pines and in the bottom lands that have not been cultivated. The quantity of forage varies according to the kinds of soils, with the density of the timber, and with conditions that are the result of past fires and grazing.

Woodlands managed to improve the stands of pine have a considerable amount of native forage that can be grazed without damaging the pines or the soil if the grazing is regulated. Woodlands that are managed to improve the hardwoods, however, ought to be protected

TABLE 5.—*Soils, original vegetation, and general productivity of native forage plants on four kinds of physiographic areas*

Physiographic area	Principal soils	Original vegetation	General productivity of native forage plants
Prairie.	Houston Sumter Oktibbeha Vaiden Eutaw	Open prairie and intermingled deciduous forest; hardwood forest along the streams; eastern redcedar on the highest swells.	An abundance of little bluestem, Indiangrass, switchgrass, Panicums, Paspalums, and many others; original vegetation only in scattered areas.
Bottom land, or first bottom.	Ochlockonee Iuka Mantachie Bibb Chastain Congaree Chewacla Wehadkee Catalpa Leeper Tuscumbia West Point Kaufman Una	Dense forest of cypress, tupelo-gum, oaks, hickory, magnolia, maples, ash, elm, pecan, vines, and other woody plants.	Low bottoms have some switchcane and palatable buds and browse.
Stream terrace, or second bottom.	Amite Cahaba Flint Waugh Leaf Izagora Prentiss Stough Byarsand Myatt Independence Huckabee Wickham Altavista Augusta Roanoke Kipling Geiger	Sweetgum, oaks, hickory, pecan, black willow, ash, hackberry, poplar, sycamore, switchcane, wildrye, and plumegrasses.	Second bottoms and bottom ridges have switchcane, wildrye, longleaf uniola, and other grasses.
Upland.	Ruston Bowie Shubuta Boswell Sawyer Cuthbert Wilcox Susquehanna Pheba Rains Lakeland Klej	Pine-hardwood forest; sparse understory of native grasses, legumes, and other plants.	Considerable amount of forage when managed to produce pine trees. Forage is most valuable in spring and summer; heavy supplemental feeding is necessary if cattle are left in the woods in winter; bluestems, Panicums, Paspalums, and legumes.

from grazing; cattle eat many of the valuable young hardwoods.

The management of areas of native forage plants ought to provide (1) control and distribution of grazing, (2) selection of the proper season of use, and (3) selection of suitable kinds of livestock.

The grazing should be controlled so that not more than one-half of the growth in any one year is grazed. As soon as this part of the growth is eaten, the cattle ought to be taken off the land. Regulate the grazing so that the forage over an area is used uniformly. Making water accessible in proper places and moving salt boxes from place to place will help accomplish uniform grazing.

The proper season of use is different on different kinds of land. Bottom lands are normally best suited to winter and spring grazing. The uplands that have pines are best suited to spring and summer grazing. At other times of the year, feed the cattle on tame pasture or on dry feed. If bottom lands are managed to improve the hardwoods, grazing should be prohibited.

Livestock should be selected for which the forage, soil, and climate are suitable. The native forage can be used better by cattle than by any other livestock, and the cattle do not damage the young pine seedlings so much as do goats, sheep, and hogs.

Engineering Properties of Soils

This soil survey report contains information about the soils in Montgomery County that will help engineers (1) in selecting sites for buildings and other structures;

(2) in choosing locations for highways and airports; (3) in determining the capacity of the soils to withstand traffic; (4) in locating sand and gravel for use in construction; (5) in planning dams, ponds, and other structures to control floods and conserve soil and water; and (6) in planning irrigation, terracing, and drainage systems.

Even though the soil map and accompanying report are too generalized for some engineering purposes, they provide information that is valuable in planning detailed field surveys and tests to determine the conditions of soils, in place, at proposed sites for construction. After examining the soil materials and observing their behavior in place and under varying conditions, the engineer can anticipate, to some extent, the properties of individual soil units.

A local soil scientist can give a more detailed interpretation of soil properties than is covered in this report.

In table 6 is some of the information about the soils that engineers need. Some of the properties of the soils, in place, are listed for each soil type and miscellaneous land type in the county. Table 6 was prepared mainly to be used in agricultural engineering, but it includes information important to other fields of engineering. Additional information can be obtained by referring to other sections of this report, particularly, Soils of Montgomery County; General Nature of the Area; and Genesis, Morphology, and Classification of Soils.

Some of the terms used by the soil scientist may not be familiar to the engineer and other terms, though familiar, have special meaning in soil science. The terms used in table 6 and other special terms used in the soil survey report are defined in the section, Descriptions of Soils, and in the Glossary at the end of the report.

The rates of infiltration in table 6 are estimates of the capacity of the soils to take in water during periods of sustained rainfall. The ratings are based on the whole profile and the underlying parent material. It was assumed that the soils have a uniform surface cover. In estimating the rates of infiltration, a deep, medium-textured, moderately permeable soil was used as a basis for comparison. This kind of soil was given a rating of medium, and the ratings for all soils were estimated by comparing their rate of infiltration with that of a medium-textured, moderately permeable soil.

Soil Survey Methods and Definitions

The scientist who makes a soil survey examines soils in the fields, classifies the soils in accordance with facts that he observes, and maps their boundaries on an aerial photograph or other map.

Field Study.—The soil surveyor bores or digs many holes to see what the soils are like. The holes are not spaced in a regular pattern, but are located according to the lay of the land. Usually they are not more than a quarter of a mile apart, and sometimes they are much closer. In most soils, each boring or hole reveals several distinct layers, called horizons, which collectively are known as the soil profile. Each layer is studied to see how it differs from others in the profile and to learn the things about the soil that influence its capacity to support plant growth.

Color is usually related to the nature of the parent material, the degree of oxidation, the content of organic matter, or to all three of these factors. The darker the surface soil, as a rule, the more organic matter it contains. Streaks and spots of gray, yellow, and brown in the lower layers generally indicate poor drainage and poor aeration.

Texture, or the content of sand, silt, and clay, is determined in the field by the way the soil feels when rubbed between the fingers. Texture determines how well the soil retains moisture, plant nutrients, and fertilizer, and whether it is easy or difficult to till.

Structure, which is the way the individual soil particles are arranged in larger grains and the amount of pore space between grains, gives us clues to the ease or difficulty with which the soil is penetrated by plant roots and by moisture.

Consistence, or the tendency of the soil to crumble or to stick together, indicates whether it is easy or difficult to keep the soil open and porous under cultivation.

Other characteristics observed in the course of the field study and considered in classifying the soil include the following: The depth of the soil over bedrock or compact layers; the presence of gravel or stones in amounts that will interfere with cultivation; the steepness and pattern of slopes; the degree of erosion; the nature of the underlying parent material from which the soil has developed; and acidity or alkalinity of the soil as measured by chemical test.

Classification.—On the basis of the characteristics observed by the survey team or determined by laboratory tests, soils are classified into phases, types, and series. The soil type is the basic classification unit. A soil type may consist of several phases. Types that resemble each other in most of their characteristics are grouped into soil series. Definitions of the soil type, soil phase, soil series, and other kinds of mapping separations follow.

Soil type.—Soils similar in kind, thickness, and arrangement of soil layers are classified as one soil type.

Soil phase.—Because of differences other than those of kind, thickness, and arrangement of layers, some soil types are divided into two or more phases. Slope variations, frequency of rock outcrops, degree of erosion, depth of soil over the substratum, and natural drainage are examples of characteristics that suggest dividing a soil type into phases.

The soil phase (or the soil type if it has not been subdivided) is the unit shown on the soil map. It is the unit that has the narrowest range of characteristics. Use and management practices, therefore, can be specified more easily for the soil phase than for soil series or yet broader groups that contain more variation.

Soil series.—Two or more soil types that differ in surface texture, but are otherwise similar in kind, thickness, and arrangement of soil layers, are normally designated as a soil series. In a given area, however, it frequently happens that a soil series is represented by only one soil type. Each series is named for a place near which it was first mapped.

Miscellaneous land types.—Areas that have little true soil are not classified into types and series, but are

TABLE 6.—*Properties of soils important to engineering*

[Dashed lines indicate that practice

Soil [1]	Depth to parent material	Parent material	Dominant texture		Dominant slope	Slope range	Permeability of subsoil	Rate of infiltration	Minimum depth to water table during wettest period
			Surface soil	Subsoil					
	Feet				*Percent*	*Percent*			*Feet*
Altavista very fine sandy loam.	2–3	Silty clay loam.	Fine sandy loam.	Silty clay loam.	0–2	0–4	Moderately slow.	Moderate	3–4
Amite fine sandy loam	3–8	Sandy loam to sandy clay loam.	Fine sandy loam.	Sandy clay loam to sandy clay.	2–5	0–15	Moderately rapid.	Moderately rapid.	10+
Augusta silt loam and fine sandy loam.	2–3	Silty clay	Silt loam	Silty clay	0–2	0–2	Moderately slow to slow.	Moderately slow.	0–1
Bibb soils, local alluvium phases.	0–2	Fine sandy clay loam.	Fine sandy loam to silt loam.	Fine sandy clay loam.	0–2	0–3	Slow	Moderate	0–1
Boswell fine sandy loam	2–4	Acid heavy clays or sandy clays.	Fine sandy loam.	Clay	2–10	2–20	Slow	Moderately slow.	4–7
Bowie fine sandy loam	3–4	Sands and sandy clay loam.	Fine sandy loam.	Sandy clay loam.	1–5	1–12	Moderately rapid.	Moderately rapid.	10+
Bowie fine sandy loam, thin solum phase.	2–3	Sandy clay loams and sandy clays.	Fine sandy loam.	Sandy clay loam.	2–5	1–8	Moderately rapid to 20 inches; very slow below 20 inches.	Moderately rapid.	10+
Byars and Myatt soils	2–3	Sandy clay or clays.	Fine sandy loam.	Sandy clay loam.	0–2	0–2	Moderate to moderately slow.	Moderate	0
Cahaba fine sandy loam	3–5	Sandy loam	Fine sandy loam.	Sandy clay loam.	1–5	0–8	Moderately rapid.	Moderately rapid.	7–10+
Catalpa clay	0–3	Alkaline alluvial clays.	Clay	Clay	0–1	0–2	Moderately slow.	Very slow	0–1
Chastain soils	0–2	Acid alluvial sandy clays and clays.	Very fine sandy clay loam.	Fine sandy clay.	0–1	0–2	Moderately slow.	Moderately slow.	0–1
Chewacla silt loam	0–2	Silty clay loam or sandy loam.	Silt loam	Silty clay loam.	0–1	0–2	Moderate	Moderate to moderately rapid.	5
Congaree silt loam	0–2	Silty clay loam or sandy loam.	Silt loam	Silty clay loam.	0–1	0–2	Moderate	Moderate to moderately rapid.	5–8
Cuthbert fine sandy loam	1–2	Clays with thin lenses of sand.	Fine sandy loam.	Clays and sandy clays.	5–20	2–30	Slow	Slow	10+
Eutaw clay	2–4	Clay	Clay	Clay	0–2	0–4	Slow to very slow.	Slow	0–1
Flint fine sandy loam	3–4	Sandy clay	Fine sandy loam.	Fine sandy clay.	0–5	0–8	Moderately slow.	Moderate	3–4

See footnotes at end of table.

and suitability of soils for use in agricultural structures

named does not apply to soil]

Drainage problems	Response to artificial drainage	Shrink-swell potential	Suitability for—					Sand content	Gravel content	Other factors
			Farm ponds	Irrigation		Terracing	Earthwork			
				Sprinkler	Surface					
None		Low	Good	Good	Good	Good	Good	Low to moderate.	Low	Gravel at depths of 4 to 7 feet in some areas.
None		Moderate.	Poor	Very good.	Good	Very good.	Very good.	High	High in places below depths of 3 to 5 feet.	Shallow to gravel in some areas.
High water table.	Fair	Low	Good				Good	Low to moderate.	Low	
Topography surrounded by high land.	Good	Low	Poor				Fair	Low to moderate.	None	Difficult to obtain outlet for drainage.
None		High	Very good.	Fair	Poor	Fair	Fair	Low	None	Needs sandy material added in earthworks to prevent sliding.
None		Low	Fair to poor.	Good	Poor	Very good.	Very good.	High	Low	Some areas have permeable substratum.
None		Low	Fair to poor.	Good	Poor	Good	Good	High	Low	Substratum is very compact but has sandy lenses in some places.
High water table and topography.[2]	Fair	Very low	Good				Fair	Low to high.	None	
None		Low	Fair	Very good.	Good	Very good.	Very good.	High	High below 5 to 8 feet in places.	Some areas have gravelly substratum.
High water table; slow permeability.	Fair	Moderately high.	Good	Good	Good		Good	None	None	
High water table; slow permeability.	Fair	Moderate.	Good	Good	Good		Good	Low	None	
None	Good	Low		Very good.	Very good.		Fair	Low	None	Has permeable substratum in some places.
None		Low		Very good.	Very good.		Fair	Low	None	Has permeable substratum in some places.
None		Moderate.	Good				Some areas good; some poor.	Low	Low	Some sandy layers are present.
Slow permeability and topography.[2]	Poor	Moderately high.	Good	Fair	Fair		Fair	None	None	Underlain by lime.
None	Fair	Low	Good	Good	Good	Good	Good	Low	Low	

TABLE 6.—*Properties of soils important to engineering and*

Soil [1]	Depth to parent material	Parent material	Dominant texture		Dominant slope	Slope range	Permeability of subsoil	Rate of infiltration	Minimum depth to water table during wettest period
			Surface soil	Subsoil					
	Feet				*Percent*	*Percent*			*Feet*
Geiger silty clay	2–4	Clay	Silty clay	Clay	0–2	0–3	Very slow	Slow	0–1
Gullied land, acid materials.	0–5	Acid sands and clays.	Variable	Variable	10–20	3–20	Moderate to slow.	Variable	
Gullied land, calcareous materials.	0–5	Calcareous clay.	Clay	Clay	3–15	2–20	Slow	Slow	
Houston clay	3–5	Calcareous clays.	Clay	Clay	0–2	0–5	Moderately slow.	Slow	2–4
Huckabee loamy sand	3–5	Sands and loamy sands.	Loamy sand.	Loamy sand.	0–3	0–8	Very rapid	Very rapid	10+
Independence loamy sand	3–5	Sands and loamy sands.	Loamy sand.	Loamy sand.	0–3	0–8	Very rapid	Very rapid	10+
Iuka soils, local alluvium phases.	2–4	Silty clay loam.	Silt loam	Silty clay loam.	0–2	0–3	Moderate to moderately rapid.	Moderate	0–1
Iuka soils	2–4	Silt loam or sandy loam.	Silt loam	Silt loam	0–2	0–2	Moderately rapid.	Moderate to moderately rapid.	5
Izagora fine sandy loam	2–3	Sandy clays or clays.	Fine sandy loam.	Fine sandy clay loam.	0–3	0–8	Moderate in upper part; slow in lower part.	Moderate	2
Kaufman clay loam	0–3	Silty clays and clays.	Clay loam	Silty clay	0–1	0–2	Moderately slow.	Slow	0–2
Kipling very fine sandy loam.	2–4	Clay	Very fine sandy loam.	Fine sandy clay.	0–2	0–5	Slow	Moderate	1–2
Klej loamy fine sand (compact substratum phase).	2–3	Loamy sand	Loamy fine sand.	Loamy fine sand.	1–4	0–12	Very rapid in upper 25 to 30 inches.	Rapid	2–3
Lakeland loamy fine sand	3–6	Sand	Loamy fine sand.	Loamy fine sand.	1–10	0–20	Very rapid	Rapid	2–3
Leaf fine sandy loam	2–3	Sandy clays and clays.	Fine sandy loam.	Fine sandy clay.	0–2	0–3	Moderately slow.	Moderately slow.	0–1
Leeper silty clay	0–3	Silty clay	Silty clay	Silty clay	0–1	0–2	Slow	Moderately slow.	0–2
Mantachie soils	0–3	Silt loam	Silty clay loam.	Silty clay loam.	0–1	0–2	Moderately slow.	Moderate	0–2
Mixed alluvial land	0–3	Sandy loam	Variable	Variable	0–2	0–3	Moderately slow.	Moderately slow.	0–2
Mixed local alluvial land	0–3	Variable	Variable	Variable	0–2	0–2	Moderately slow.	Moderately slow.	0–2
Ochlockonee silt loam	3–5	Silt loam to sandy loam.	Silt loam	Silt loam to sandy loam.	0–1	0–2	Rapid	Moderate to moderately rapid.	5–8
Oktibbeha clay	2–3	Clays	Clay	Clay	3–10	1–20	Slow to very slow.	Slow	10+
Pheba very fine sandy loam.	2–3	Sandy clay loam.	Very fine sandy loam.	Light sandy clay loam.	0–2	0–3	Moderately rapid to 20 inches, then slow.	Moderately rapid.	1–2
Prentiss very fine sandy loam.	2–3	Sandy clay loam.	Very fine sandy loam.	Fine sandy clay loam.	1–3	0–5	Moderately rapid to 30 inches, then slow.	Moderate	2–3

See footnotes at end of table.

suitability of soils for use in agricultural structures—Continued

Drainage problems	Response to artificial drainage	Shrink-swell potential	Suitability for—					Sand content	Gravel content	Other factors
			Farm ponds	Irrigation		Terracing	Earthwork			
				Sprinkler	Surface					
Slow permeability and topography.[2]	Fair	Moderately high.	Good	Fair	Fair		Fair	None	None	
		Variable				Very poor.	Good	None	None	
		High				Very poor.	Fair to good.	Low to high.	Low	
		High	Good	Good	Poor	Good	Fair	None	None	
None		Very low	Very poor.	Fair	Poor		Poor	Very high.	High below 5 to 8 feet in places.	
None		Very low	Very poor.	Fair	Poor		Poor	Very high.	High below 5 to 8 feet in places.	Some areas have gravelly substratum at depths of 5 to 8 feet.
Topography [2]	Good	Low	Poor	Good	Poor		Fair	Low to moderate.	None	
None		Low		Good	Good		Fair	Low	Low	
None	Good	Moderate.	Good	Good	Good	Good	Good	Moderate.	Low	
High water table; slow permeability.	Fair	Moderately high.	Good	Good	Good		Good	None	None	
Slow permeability.	Fair	Moderate.	Very good.	Good	Good		Very good.	Very low.	None	
		Very low.	Fair to good.	Fair	Poor	Fair	Fair	Very high.	Low	Compact substratum that has permeable layers in some places.
		Very low.	Fair to good.	Fair	Poor	Fair	Fair	Very high.	Low	
High water table.	Fair to good.	Moderate.	Good	Good	Good		Good	Low	Very low	
High water table.	Fair to good.	Moderately high.	Good	Good	Good		Good	Very low.	None	
Variable texture.	Fair to good.	Low	Poor	Fair	Fair		Fair	Moderate.	Very low	
None	Good	Moderate.	Good	Fair	Fair		Good	Very low.	None	
None	Good	Moderate.	Very good.	Fair	Fair		Good	Very low.	None	
None		Low		Very good.	Very good.		Fair	Low	Very low	
		Very high.	Very good.	Fair	Very poor.	Good	Good	Very low.	None	Underlain by lime; cracks on drying.
Fragipan	Good	Very low.	Poor	Good	Fair	Good	Fair	High	Very low	
Fragipan	Good	Very low.	Fair	Good	Good		Fair	Moderately high.	Very low	

TABLE 6.—*Properties of soils important to engineering and*

Soil [1]	Depth to parent material	Parent material	Dominant texture		Dominant slope	Slope range	Permeability of subsoil	Rate of infiltration	Minimum depth to water table during wettest period
			Surface soil	Subsoil					
	Feet				*Percent*	*Percent*			*Feet*
Rains fine sandy loam	2–3	Sandy clay loam to sandy clay.	Fine sandy loam.	Sandy clay loam.	1–3	0–4	Moderately slow.	Moderate	0–1
Roanoke silt loam	1–4	Silty clay to clay.	Silt loam	Silty clay loam.	0–1	1–3	Moderate to moderately slow.	Moderately slow.	0–1
Ruston fine sandy loam	3–5	Loamy sand to sandy clay loam.	Fine sandy loam.	Sandy clay loam.	2–8	1–15	Moderately rapid.	Rapid	10+
Sandy alluvial land, somewhat poorly drained.	0–3	Sand and silt	Variable	Variable	0–1	0–1	Moderate to rapid.	Moderate to rapid.	0–2
Sawyer fine sandy loam	2–3	Sandy clay to clay.	Fine sandy loam.	Fine sandy clay loam.	2–8	1–12	Moderately high to 24 inches, then slow.	Moderately high.	3–5
Shubuta very fine sandy loam.	2–4	Sands and clays.	Very fine sandy loam.	Sandy clay	2–10	1–12	Moderate to moderately slow.	Moderate	10+
Stough fine sandy loam	2–3	Sandy clay loam to sandy clay.	Fine sandy loam.	Sandy clay loam.	0–1	0–3	Moderately rapid to depth of 20 inches, then slow.	Moderate	0–2
Sumter clay	2–4	Calcareous clays.	Clay	Clay	2–7	2–15	Moderately slow.	Moderately slow.	10+
Susquehanna fine sandy loam.	1–4	Clays	Fine sandy loam.	Clay	2–8	1–12	Slow	Slow	3–8
Swamp	0–3	Silt loam to clay.	Variable		0–1	0–1	Very slow	Very slow	0–1
Terrace escarpments	0–3	Sands and gravel.	Sandy loam to sand.	Sands and gravel.	15–25	5–25	Very rapid	Moderate	10+
Tuscumbia silty clay	0–3	Silty clay	Silty clay	Silty clay	0–1	0–2	Moderately slow.	Moderately slow.	0–2
Una clay	0–4	Clay	Clay	Clay	0–1	0–2	Slow	Slow	0–2
Vaiden silty clay	2–4	Clay	Silty clay	Clay	1–8		Slow	Slow	2–3
Waugh fine sandy loam	2–4	Silty clay	Fine sandy loam.	Silty clay loam.	0–2	0–5	Moderate through B horizon.	Moderate	2–3
Wehadkee silt loam	0–3	Silty clay loam.	Silt loam	Silty clay loam.	0–1	0–2	Moderately slow.	Moderately slow.	0–1
West Point clay	1–3	Calcareous clay.	Clay	Clay	0–2	0–4	Moderately slow to slow.	Moderately slow.	1–2
Wickham fine sandy loam	3–4	Sandy clay loam.	Fine sandy loam.	Fine sandy clay.	0–4	0–7	Moderately slow.	Moderate	3–5
Wilcox clay loam	3–5	Clay shales	Clay loam	Clay	0–2	0–3	Slow	Slow	3–8

[1] Dominant type if series has more than one type.

[2] Topography makes it difficult to obtain outlet.

suitability of soils for use in agricultural structures—Continued

Drainage problems	Response to artificial drainage	Shrink-swell potential	Suitability for—					Sand content	Gravel content	Other factors
			Farm ponds	Irrigation		Terracing	Earthwork			
				Sprinkler	Surface					
High water table; lack of outlets.	Poor	Very low	Good				Good	Moderately high.	Very low	
High water table; lack of outlets.	Poor	Low	Fair to good.				Fair	Very low	None	
		Low	Poor	Good	Poor	Very good.	Very good.	High	Low	
Variable	Fair	Low	Poor to good.	Fair	Fair		Fair	Moderately high.	Low	
		Low to moderate.	Very good.	Good	Poor	Very good.	Very good.	Low to high.	Low to moderate.	
		Moderate.	Good	Fair	Very poor.	Good	Good	Moderate.	Low	Underlying material is highly permeable in places.
Fragipan	Fair	Low	Good	Fair	Fair		Fair	Moderate.	Low	
		Very high.	Very good.	Good	Poor	Good	Good	None	None	
		High	Good	Poor	Very poor.	Fair	Fair	Low	Very low	Fill material will slide if saturated.
Lack of outlets.	Poor	Low	Poor					Very low	None	
		Very low	Very poor.					High	High	
High water table.	Fair	Moderate.	Good	Good	Good		Good	Very low	None	
High water table.	Fair to poor.	Moderate.	Good	Fair	Fair		Good	Very low	None	
		High	Very good.	Fair	Fair	Good	Very good.	Very low	None	
		Low	Good	Good	Good	Good	Good	Moderate.	Very low	
High water table.	Poor to fair.	Low	Fair					Very low	Very low	
None	Good	Very high.	Good	Good	Good		Good	None	None	
		Moderate.	Good	Good	Good	Good	Good	Moderate.	Low to high.	Some areas have gravelly substratum at depths of 3 to 7 feet.
		Very high.	Very good.	Poor	Very poor.	Fair	Good	Very low	None	Fill material may slough if saturated.

identified by descriptive names. Examples in Montgomery County are Mixed local alluvial land; Sandy alluvial land, somewhat poorly drained; and Swamp.

Soil complex.—If two or more soils are so intricately associated in small areas that it is not feasible to show them separately on the soil map, they are mapped together and called a soil complex. An example is Shubuta-Cuthbert fine sandy loams, eroded sloping phases.

Undifferentiated soils.—Two or more soils that are not regularly associated geographically may be mapped as a single unit—a group of undifferentiated soils—if the differences between the soils are too slight to justify a separation. An example in Montgomery County is Byars and Myatt soils.

A more detailed discussion of the methods used in soil surveying can be found in the U.S. Department of Agriculture Soil Survey Manual.[2] Fuller definitions of some of the foregoing terms and definitions of unfamiliar terms used in this report can be found in the Glossary.

Soils of Montgomery County

This section consists of two main parts. In the first part, the soil series and their relations are discussed. In the second part, the individual soils, or mapping units, are described.

Soil Series and Their Relations

In some parts of Montgomery County large areas of somewhat uniform soils occur, but in most places the individual soils are in small areas and fairly complex associations. In some places, one soil grades evenly into another, but in other places adjacent soils, within small distances, change abruptly in color, texture, and other characteristics.

Soils on the sandy uplands and on terraces are markedly different from those in the prairie section in color, texture, structure, content of organic matter, reaction, and drainage. These differences are largely the result of the effects of the underlying parent material and of the oxidation, aeration, erosion, and leaching that occurred during the formation of soils.

Except for some soils in the prairie section and on the first bottoms, the soils in the county contain little organic matter. The surface soil of most sandy upland soils is leached of organic and mineral plant nutrients. Reaction in the surface soil and the subsoil ranges from strongly acid to mildly alkaline.

The texture of the soils ranges from loamy sands or sands to clays. The consistence of the subsoil is loose and friable to compact and plastic. In the northern part of the county, large areas of soils on terraces are underlain by rounded quartz gravel. Much of this quartz is mined to be used in construction work. Fragments of crusted iron are scattered on the surface and imbedded in the subsoil in some of the hilly sections in the southern part of the county.

Large areas of level soils that are suitable for farming occur in the northern part of the county. Much of the prairie section consists of nearly level to gently sloping soils. Just south of the prairie section are large sloping and steep areas. Except on the level stream terraces and on flood plains, many areas have had considerable erosion and some gullying. Much of the erosion is the result of growing clean-cultivated crops year after year on the same soils without adequate cover and water disposal. Large acreages of these eroded soils have been diverted from cultivated crops to pasture and hay in the prairie section and to forest elsewhere.

Soils on uplands

The upland soils in Montgomery County are of two kinds—(1) soils in the southern part of the county that developed from the weathered products of unconsolidated sands, sandy clays, and clays; and (2) soils in the central part of the county in the prairie section. Some of the soils in the prairie section have developed from weathered Selma chalk, and some from beds of heavy clays deposited on the Selma chalk.

These two kinds of upland soils differ widely in color, texture, consistence, and chemical composition. The Ruston soils are the best drained upland soils that developed from the unconsolidated sands and clays. They have a sandy loam surface soil and a sandy clay loam subsoil. The Bowie soils are similar to the Ruston soils in texture and consistence of the surface soil and subsoil; but the Bowie soils have a yellowish-brown subsoil and are more compact in the lower horizons than the Ruston soils. The Pheba soil is not so well drained as the Bowie soils and has a weakly developed fragipan. The thin solum phases of the Bowie soils are similar to the normal Bowie soils to a depth of 18 to 24 inches, but at this depth a very compact layer of cemented soil material occurs. The Rains soil occurs in slight depressions, on flats, or along some of the narrow drainageways. They are poorly drained.

The Shubuta soils are more friable than the Bowie soils and are somewhat better drained. The Sawyer soils have a more friable upper subsoil than the Boswell soils and occur on smoother topography. The Cuthbert soils are on stronger slopes than any other soils developed from unconsolidated sands and clays. They have a thinly developed solum. The Susquehanna soils have little or no development in the B horizon and are very mottled and plastic.

The Wilcox soils are similar to the Susquehanna in some characteristics but have developed from clay shales instead of clays. They are redder than the Susquehanna soils throughout the profile.

The Lakeland soils have developed from sands and loamy sands and are excessively drained. To a depth of about 28 to 30 inches, the Klej soils are similar to the Lakeland soils, but below these depths are underlain by compact material. Because of this compact material, Klej soils are less well drained than the Lakeland soils.

The Sumter soils and the Houston soil differ in color, although they were developed from underlying Selma chalk. The Houston soil is dark olive gray in the subsoil, whereas the Sumter soils are light gray or pale olive. The West Point soils are somewhat similar to the Houston soil in color but were developed from local alluvium.

[2] SOIL SURVEY STAFF. SOIL SURVEY MANUAL. U.S. Dept. Agr. Handbook 18, 503 pp., illus. 1951.

The Oktibbeha, Vaiden, and Eutaw soils occur with or next to the Sumter soils and the Houston soil. These soils have developed from beds of heavy acid clays overlying calcareous material like that under the Sumter and Houston soils. The Vaiden soils are intermediate between the Oktibbeha and Eutaw soils in color, drainage, and topography. The Oktibbeha soils are redder than the Vaiden or Eutaw soils and occur on more sloping topography.

Soils on stream terraces

Formerly the rivers and larger creeks in the county flowed at a much higher level than they do now. At these higher levels, they deposited sand, gravel, and clay. The channels of the streams were gradually deepened by the flowing water, and new flood plains were formed at lower levels. Stream terraces are the remnants of the older, high-lying flood plains and are now above the overflow stage. The soils on these stream terraces have weakly to moderately developed horizons.

The soils on stream terraces developed from old general alluvium. This alluvium washed (1) from soils on the Piedmont; (2) from soils that developed on unconsolidated beds of sands and clays; and (3) from soils on the prairie section that have an admixture of soils developed on unconsolidated beds of sands and clays.

Old general alluvium washed from soils on the Piedmont is the parent material of the Wickham, Altavista, Augusta, and Roanoke soils. Of these soils, the Wickham soils are the best drained and the Roanoke soil is the poorest drained. The Flint, Izagora, Leaf, and the Byars and Myatt soils developed on unconsolidated beds of sands and clays.

The Amite and the Cahaba soils are the best drained soils on stream terraces. They make up some of the best cropland in the county. These soils have a sandy loam surface soil and a friable sandy clay loam subsoil.

The Waugh, Prentiss, and Stough soils occupy somewhat lower positions than the Amite and Cahaba soils. The Waugh soils are better drained than the Prentiss and Stough soils. In the Waugh soils, however, drainage is impaired by a compact, brittle layer that occurs at a depth of about 25 inches. In the Prentiss and Stough soils, drainage is impaired by a fragipan.

The Independence and Huckabee soils are excessively drained loamy sands.

The Kipling and Geiger soils have developed primarily from material washed from the prairie uplands. They are slightly less acid than soils on terraces that developed from unconsolidated beds of sands and clays. The Geiger soils are similar to the Eutaw soils on uplands. The Kipling soils are better drained than the Geiger soils and are less mottled in the upper part of the profile.

Soils on flood plains

The flood plains are nearly level areas along streams that are susceptible to flooding. The soils on the flood plains have developed from material deposited by overflowing streams. In some areas this material has been carried long distances. The characteristics of soils on flood plains depend largely on the kinds of soils from which the alluvium washed, the rate the stream was flowing when the materials were deposited, and the elevation of the soils above the water table. Apparently, some of the soils on flood plains in the county contain small amounts of material that washed from the limestone valley and from areas of sandstone and shale. A considerable amount of the material has been washed from the Piedmont, in some areas enough to form a dominant part of the present soil.

The soils on flood plains are young; they have not been in place long enough for distinct horizons to develop.

The Ochlockonee, Iuka, and Mantachie soils consist of material washed from the sandy uplands. They are friable and fairly fertile. These soils differ mainly in drainage. The Ochlockonee soils are well drained, and the Mantachie soils are somewhat poorly drained. Bibb soils, local alluvium phases, are included with the soils on flood plains. They are poorly drained and occur primarily in slight depressions on both uplands and stream terraces. The Chastain soils developed from clayey material that washed from upland soils that formed upon unconsolidated beds of sands and clays. The Chastain soils are poorly drained and are more plastic than the Ochlockonee, Iuka, Mantachie, and Bibb soils.

The Congaree, Chewacla, and Wehadkee soils developed from material that washed from the Piedmont. Except for differences in the source of the alluvium, the Congaree soils are similar to the Ochlockonee, the Chewacla soils are similar to the Iuka, and the Wehadkee soils are similar to the Mantachie.

The Catalpa soil is the best drained soil on the flood plain in the prairie section. It contains less material washed from soils on unconsolidated beds of sands and clays than any other soil on the flood plain in the prairie section. The Leeper soil is similar to the Catalpa soil in the surface soil. It is mottled in the lower layers, is slightly less alkaline than the Catalpa soil, and is somewhat more poorly drained. The Tuscumbia soils are grayer and more poorly drained than the Catalpa or the Leeper soils. The Kaufman soil, in drainage, is similar to the Catalpa soil but is neutral to slightly acid. The Una soil resembles the Tuscumbia soils in color and drainage but is neutral to slightly acid.

Descriptions of Soils

This subsection is provided for those who want detailed information about the soils in the county. It describes the soil series and the single soils, or mapping units, in the county; that is, the areas on the detailed soil map that are bounded by lines and identified by a symbol. For more general information about the soils, the reader can refer to the section, General Soil Map, in which broad patterns of soils are described.

An important part of this subsection is the description of the series. This description gives statements about the general nature of the soils in the series and compares those soils with the soils in other series. It also includes statements on topography, drainage, parent material, and native vegetation.

The descriptions of the single soils follow the series description. All the soils in one series that have the same texture are together. For example, all Amite soils that have a fine sandy loam surface soil are together, and then all Amite soils that have a sandy clay loam surface

soil. The description of the first soil in each series contains a profile description that is generally representative of the soils in the series. The soils that follow, as a rule, are discussed in relation to the first soil described in the series. For some soil series two profiles are described. In the Congaree series profiles are described for a silt loam and a fine sandy loam. If a mapping unit contains inclusions of other soils, these are named in the description of the mapping unit.

In describing soils, the scientist frequently assigns a letter symbol and a subscript, for example, "A_1," to the various layers. These symbols have a special meaning that concerns scientists and others who make a special study of soils. Most readers will need to remember only that all letter symbols beginning with "A" are for surface soil; those beginning with "B" are for subsoil; those beginning with "C" are for substratum, or parent material; and those beginning with "D" are for underlying material that is different from the material above it.

The color of a soil can be described in words, such as yellowish brown, or can be stated in much more precise terms given by symbols that indicate hue, value, and chroma, such as 10YR 5/4. Precise symbols of this kind, called Munsell notations, are given along with words that tell the color of most soil horizons.

The location and distribution of the single soils are shown on the soil map near the back of this report. Their approximate acreage and proportionate extent are given in table 7. It will be helpful to refer to the section, Soil Survey Methods and Definitions, where "series," "types," "phases," and other special terms used in describing soils are defined.

TABLE 7.—*Approximate acreage and proportionate extent of the soils mapped*

Soil	Area	Extent
	Acres	*Percent*
Altavista very fine sandy loam	1, 631	0. 3
Amite fine sandy loam:		
Level phase	3, 659	. 7
Eroded very gently sloping phase	3, 185	. 6
Eroded gently sloping phase	1, 388	. 3
Eroded sloping phase	530	. 1
Amite sandy clay loam:		
Severely eroded gently sloping phase	362	. 1
Severely eroded sloping phase	734	. 1
Severely eroded strongly sloping phase	390	. 1
Augusta silt loam and fine sandy loam	6, 840	1. 4
Bibb soils, local alluvium phases	1, 013	. 2
Boswell fine sandy loam:		
Eroded nearly level phase	3, 996	. 8
Eroded very gently sloping phase	5, 660	1. 1
Eroded gently sloping phase	3, 387	. 7
Boswell clay loam:		
Severely eroded nearly level phase	605	. 1
Severely eroded very gently sloping phase	6, 348	1. 3
Severely eroded gently sloping phase	9, 511	1. 9
Severely eroded, 8 to 20 percent slopes	15, 405	3. 0
Bowie fine sandy loam:		
Very gently sloping phase	1, 683	. 3
Level phase	417	. 1
Eroded very gently sloping phase	878	. 2
Eroded gently sloping phase	543	. 1
Eroded very gently sloping thin solum phase	1, 060	. 2
Eroded gently sloping thin solum phase	743	. 1
Byars and Myatt soils	6, 469	1. 3
Cahaba fine sandy loam:		
Level phase	2, 801	. 6
Eroded very gently sloping phase	2, 700	. 5
Eroded gently sloping phase	580	. 1
Catalpa clay	3, 779	. 7
Chastain soils	4, 551	. 9
Chewacla silt loam	3, 196	. 6
Congaree silt loam	5, 150	1. 0
Congaree fine sandy loam	1, 648	. 3
Cuthbert fine sandy loam, eroded gently sloping phase	801	. 2
Cuthbert soils, severely eroded, 8 to 30 percent slopes	2, 927	. 6
Cuthbert, Lakeland and Boswell soils:		
Eroded, 2 to 12 percent slopes	2, 478	. 5
12 to 30 percent slopes	1, 105	. 2
Eroded, 12 to 30 percent slopes	13, 680	2. 7
Severely eroded, 12 to 30 percent slopes	2, 908	. 6
Eutaw clay	1, 232	. 2
Eutaw fine sandy loam	376	. 1
Flint fine sandy loam:		
Level phase	1, 478	0. 3
Eroded very gently sloping phase	583	. 1
Eroded gently sloping phase	187	(1)
Geiger silty clay	3, 958	. 8
Geiger silty clay, overwash variant	2, 760	. 5
Geiger very fine sandy loam	4, 601	. 9
Gullied land, acid materials	2, 525	. 5
Gullied land, calcareous materials	1, 999	. 4
Houston clay, eroded nearly level phase	3, 309	. 7
Huckabee loamy sand, 0 to 5 percent slopes	1, 981	. 4
Independence loamy sand, 0 to 5 percent slopes	3, 382	. 7
Iuka soils	317	. 1
Iuka soils, local alluvium phases	1, 124	. 2
Izagora fine sandy loam:		
Level phase	8, 238	1. 6
Very gently sloping phase	6, 031	1. 2
Eroded gently sloping phase	589	. 1
Kaufman clay loam	2, 478	. 5
Kipling silty clay	2, 439	. 5
Kipling very fine sandy loam:		
Level phase	7, 123	1. 4
Eroded nearly level phase	1, 456	. 3
Klej loamy fine sand:		
Compact substratum, 0 to 5 percent slopes	839	. 2
Compact substratum, 5 to 12 percent slopes	1, 069	. 2
Lakeland loamy fine sand:		
0 to 5 percent slopes	3, 789	. 7
5 to 12 percent slopes	4, 752	. 9
12 to 20 percent slopes	408	. 1
Leaf fine sandy loam	2, 033	. 4
Leeper silty clay	18, 638	3. 7
Mantachie soils	9, 101	1. 7
Mixed alluvial land	4, 191	. 8
Mixed local alluvial land	6, 923	1. 3
Ochlockonee silt loam	498	. 1
Oktibbeha clay:		
Eroded nearly level phase	7, 534	1. 5
Eroded very gently sloping phase	2, 787	. 5
Severely eroded very gently sloping phase	5, 628	1. 1
Eroded gently sloping phase	3, 496	. 7
Severely eroded gently sloping phase	9, 087	1. 8
Severely eroded, 8 to 20 percent slopes	5, 433	1. 1
Oktibbeha fine sandy loam:		
Eroded nearly level phase	1, 281	. 3
Eroded very gently sloping phase	1, 583	. 3
Eroded gently sloping phase	574	. 1
Eroded sloping phase	452	. 1
Pheba very fine sandy loam	409	. 1

Footnote at end of table.

TABLE 7.—*Approximate acreage and proportionate extent of the soils mapped*—Continued

Soil	Area	Extent
	Acres	*Percent*
Prentiss very fine sandy loam:		
Level phase	499	0. 1
Eroded very gently sloping phase	698	. 1
Rains fine sandy loam	3, 826	. 8
Roanoke silt loam	7, 980	1. 6
Ruston fine sandy loam:		
Eroded very gently sloping phase	824	. 2
Eroded gently sloping phase	393	. 1
Eroded sloping phase	290	. 1
Sandy alluvial land, somewhat poorly drained	20, 171	4. 0
Sawyer fine sandy loam:		
Very gently sloping phase	598	. 1
Eroded very gently sloping phase	2, 417	. 5
Eroded gently sloping phase	1, 524	. 3
Eroded sloping phase	780	. 2
Sawyer sandy clay loam:		
Severely eroded gently sloping phase	274	. 1
Severely eroded sloping phase	479	. 1
Shubuta very fine sandy loam:		
Eroded very gently sloping phase	1, 358	. 3
Very gently sloping phase	195	(1)
Eroded gently sloping phase	3, 666	. 7
Eroded sloping phase	1, 406	. 3
Shubuta sandy clay loam:		
Severely eroded gently sloping phase	401	. 1
Severely eroded sloping phase	559	. 1
Shubuta-Cuthbert fine sandy loams:		
Eroded very gently sloping phases	290	. 1
Eroded gently sloping phases	693	. 1
Eroded sloping phases	327	. 1
Shubuta-Cuthbert sandy clay loams:		
Severely eroded gently sloping phases	407	. 1
Severely eroded sloping phases	591	. 1
Shubuta-Cuthbert complex, eroded, 12 to 30 percent slopes	1, 439	. 3
Stough fine sandy loam	171	(1)
Sumter clay:		
Eroded nearly level phase	18, 743	3. 7
Severely eroded nearly level phase	2, 889	. 6
Eroded very gently sloping phase	3, 403	. 7
Severely eroded very gently sloping phase	12, 718	2. 5
Eroded gently sloping phase	911	. 2
Severely eroded gently sloping phase	5, 318	1. 0
Sumter-Oktibbeha-Vaiden clays:		
Eroded nearly level phases	5, 513	1. 1
Eroded very gently sloping phases	463	. 1
Severely eroded very gently sloping phases	3, 108	. 6
Sumter-Oktibbeha-Vaiden clays—Continued		
Eroded gently sloping phases	644	0. 1
Severely eroded gently sloping phases	5, 675	1. 1
Severely eroded sloping phases	3, 560	. 7
Susquehanna fine sandy loam:		
Eroded nearly level phase	1, 616	. 3
Eroded very gently sloping phase	442	. 1
Eroded, 5 to 12 percent slopes	1, 660	. 3
Swamp	370	. 1
Terrace escarpments	877	. 2
Tuscumbia silty clay	16, 050	3. 2
Tuscumbia fine sandy loam	230	(1)
Una clay	13, 940	2. 8
Vaiden fine sandy loam:		
Level phase	505	. 1
Nearly level phase	693	. 1
Eroded nearly level phase	3, 238	. 6
Eroded very gently sloping phase	2, 375	. 5
Eroded gently sloping phase	1, 354	. 3
Eroded sloping phase	429	. 1
Vaiden silty clay:		
Level phase	937	. 2
Nearly level phase	728	. 1
Eroded nearly level phase	4, 801	. 9
Eroded very gently sloping phase	741	. 1
Severely eroded very gently sloping phase	669	. 1
Eroded gently sloping phase	491	. 1
Severely eroded gently sloping phase	1, 138	. 2
Waugh fine sandy loam:		
Level phase	2, 400	. 5
Eroded very gently sloping phase	885	. 2
Wehadkee silt loam	4, 295	. 8
West Point clay:		
Level phase	7, 351	1. 5
Nearly level phase	14, 850	2. 9
Wickham fine sandy loam:		
Level phase	8, 519	1. 7
Eroded very gently sloping phase	2, 492	. 5
Eroded gently sloping phase	403	. 1
Wickham silt loam	1, 698	. 3
Wilcox clay loam:		
Level phase	250	(1)
Eroded nearly level phase	1, 025	. 2
Miscellaneous, urban, water, mines and pits	20, 254	4. 0
Total	505, 600	100. 0

[1] Less than 0.1 percent.

Altavista series

In this series are moderately deep, moderately well drained, level and very gently sloping soils on stream terraces. These soils developed on old alluvium that was washed from the Piedmont. They are strongly acid throughout the profile. They have an olive-brown very fine sandy loam surface soil and a yellowish-brown silty clay loam subsoil. The native vegetation is gum, oak, hickory, elm, and pine.

Only one Altavista soil is mapped in Montgomery County. This soil has a small total acreage. The largest areas are northwest of Montgomery near Hunter and northeast of Montgomery near Madison. This soil occurs with the Wickham, Roanoke, and Augusta soils and locally with the Cahaba and Waugh soils. It is more poorly drained than the Wickham soils and less red in the subsoil. It is better drained than the Augusta soil and less mottled in the subsoil. The Altavista soil differs from the Waugh soil in having developed on old alluvium that washed from the Piedmont instead of alluvium washed from the Coastal Plain.

Altavista very fine sandy loam (0 to 5 percent slopes) (Ac).—The following describes a profile of this soil in a moist cultivated field:

- A_p 0 to 5 inches, olive-brown (2.5Y 4/4) very fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, wavy boundary.
- B_1 5 to 9 inches, yellowish-brown (10YR 5/6) heavy very fine sandy loam to light fine sandy clay loam; few streaks and splotches of olive brown from A_p horizon; very weak, fine, subangular blocky structure; very friable; strongly acid; gradual, wavy boundary.
- B_2 9 to 20 inches, yellowish-brown (10YR 5/8) silty clay loam; fine to moderate, medium, subangular blocky structure; friable when moist and hard when dry; strongly acid; gradual, wavy boundary.

B_3 20 to 27 inches, yellowish-brown (10YR 5/8) silty clay loam with a few, medium, distinct mottles of yellowish red (5YR 4/8); moderate, medium, subangular blocky structure; firm when moist and very hard when dry; strongly acid; gradual, wavy boundary.

C 27 to 44 inches, distinctly mottled yellowish-brown (10YR 5/8), strong-brown (7.5YR 5/8), and pale-olive (5Y 6/4) silty clay loam; moderate, medium to coarse, subangular blocky structure; firm when moist and extremely hard when dry.

The solum ranges from 20 to 30 inches in thickness. The surface soil ranges from 5 to 12 inches in thickness and from brownish gray to olive brown in color. In some places sand and gravel occur at depths that range from 4 to 7 feet.

Included with this soil are small areas of Altavista silt loam and small areas of Augusta soils. Also included are small patches where most of the surface soil has been lost through erosion.

Altavista very fine sandy loam is low in organic matter and natural fertility. It has moderate infiltration and a moderately high capacity for holding available moisture. The permeability of the subsoil is moderately slow.

Use and management.—Practically all of this soil has been cleared and cropped. Some of this acreage is now in row crops, some is in pasture, and some has reverted to pine forest. This soil is suited to a fairly wide range of crops and responds well to good management, especially additions of fertilizer and organic matter. Capability unit B10–I–1.

Amite series

In this series are deep, well-drained, level to strongly sloping soils that developed mainly from old alluvium that was washed from the red soils on the Coastal Plain. The native vegetation is loblolly pine and mixed hardwoods. These soils are medium acid to strongly acid. Except in the severely eroded areas, they have a dusky-red or dark-brown to grayish-brown fine sandy loam surface soil and a red to dark-red sandy clay loam to sandy clay subsoil.

Amite soils are fairly extensive. They are mainly in one belt that extends from Montgomery eastward almost to the county line. In this county, they generally occur with the Cahaba soils. They are browner in the surface soil than the Cahaba soils and redder and denser in the subsoil.

In Montgomery County, the terraces on which Amite soils occur are at three different elevations. The highest terraces are the oldest. They occur in three separate areas. One high area is in and just east of Montgomery, another is near Merry in the eastern part of the county, and the third and smallest is just west of Antioch Church on sheet 16 of the soil map. These three high terrace areas are more strongly sloping and more highly dissected than the lower areas. The Amite soils on the high terraces are similar to the Greenville, Red Bay, Orangeburg, and other upland soils. Greenville, Red Bay, and Orangeburg soils are not mapped in Montgomery County.

All of the Amite soils are underlain by sand and gravel at depths that range from 3 to 10 feet. The depth to this sand and gravel is greater in the soils at the higher elevations. The soils on the intermediate and high terraces are somewhat finer in texture than those on the lower terraces.

Amite fine sandy loam, level phase (0 to 2 percent slopes) (AbA).—The following describes a profile in a moist cultivated field:

A_p 0 to 5 inches, dark reddish-brown (5YR 3/3) fine sandy loam; very weak, crumb structure; very friable when moist and nearly loose when dry; medium acid; clear, smooth boundary.

A_3 5 to 9 inches, dark reddish-brown (2.5YR 3/4) fine sandy loam slightly compacted (plowpan) in upper part; structureless (massive); very friable; strongly acid; gradual, smooth boundary.

B_{21} 9 to 25 inches, dark-red (10R 3/6) fine sandy clay loam; weak, fine, subangular blocky structure; friable when moist and slightly sticky when wet; strongly acid; gradual, smooth boundary.

B_{22} 25 to 48 inches, dark-red (10R 3/6) fine sandy clay; weak, medium, subangular blocky structure; friable when moist and sticky when wet; strongly acid; gradual, smooth boundary.

B_3 48 to 60 inches, red (2.5YR 4/8) sandy clay loam; contains a few quartz pebbles as much as a fourth of an inch in diameter; very weak, medium, subangular blocky structure; very friable; strongly acid; gradual, smooth boundary.

C 60 to 84 inches, red (2.5YR 4/8) sandy loam with pebbles like those in layer above; single grain (structureless); very friable when moist and loose when dry; strongly acid; clear, smooth boundary.

D 84 to 100 inches +, stratified beds of sand and gravel.

The surface soil ranges from dusky red to grayish brown in color. The B horizon ranges from sandy clay loam to sandy clay in texture. Included with this soil are small areas of Chattahoochee fine sandy loam. These areas have a lighter colored surface soil than the Amite soil and a brighter red subsoil. Chattahoochee soils are not mapped in this county.

This soil is moderately high in organic matter and in natural fertility. It has moderately rapid infiltration and a moderate capacity for holding moisture available. The tilth is good.

Use and management.—This is the most extensive Amite soil in Montgomery County. It is well suited to most crops grown in the area. Cotton, corn, and small grain are the main crops. If this soil is adequately fertilized and otherwise well managed, it has high yields. Capability unit A3–I–1.

Amite fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (AbB2).—This soil has a thinner and lighter colored surface soil than Amite fine sandy loam, level phase, but it is similar to the level phase in most other profile characteristics. It has greater runoff and a greater hazard of erosion than the level phase. In a few small areas most of the original surface soil has been washed away, and in some areas a few shallow gullies have formed. This soil responds well to fertilization and other good management.

This soil is suited to about the same kinds of crops as the level phase. Most of the acreage is in row crops, mainly cotton and corn. Small grain and pasture plants are also grown. Only limited conservation measures are needed. Capability unit A3–IIe–1.

Amite fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (AbC2).—Because this soil is steeper than Amite fine sandy loam, level phase, it has more rapid runoff. It also has a lighter colored and thinner surface soil. In some places, a few shallow gullies have formed. Included with this soil are eroded areas in which the sandy clay loam subsoil is exposed.

This soil is suited to about the same kinds of crops as the level phase, but it needs more exacting management because it has slower infiltration. Capability unit A3–IIIe–1.

Amite fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (AbD2).—This soil has a lighter colored surface soil and subsoil than Amite fine sandy loam, level phase. It varies more in thickness of the surface soil than the level phase and is shallower to the underlying substratum. It is low in organic matter and in natural fertility. Because of the rapid runoff, erosion is a decided hazard and intensive conservation measures are needed where this soil is cultivated. Capability unit A3–IVe–1.

Amite sandy clay loam, severely eroded gently sloping phase (5 to 8 percent slopes) (AcC3).—This soil has lost most of its surface soil through erosion. Consequently, its plow layer—a reddish brown sandy clay loam—is somewhat similar to the subsoil of the uneroded Amite soils. The lower horizons of this soil are similar to those of Amite fine sandy loam, level phase, but the capacity for holding available moisture is lower. This soil is very susceptible to further erosion.

This soil is not suited to intensive use. If it is cultivated, it needs exacting conservation to control runoff. The total acreage of this soil is small. Capability unit A3–IVe–1.

Amite sandy clay loam, severely eroded sloping phase (8 to 12 percent slopes) (AcD3).—Except for its steeper slopes, this soil is similar to Amite sandy clay loam, severely eroded gently sloping phase. Runoff is higher than on the severely eroded gently sloping phase, and conservation is more difficult. This soil is best suited to perennial sod crops and should be cultivated only occasionally. Capability unit A3–IVe–1.

Amite sandy clay loam, severely eroded strongly sloping phase (12 to 20+ percent slopes) (AcE3).—This soil varies more from place to place than any other Amite soil. The surface soil ranges from grayish brown to reddish brown. Slopes range from 12 to more than 20 percent, but most of the acreage is within a slope range of 12 to 15 percent. Included with this soil are some areas of fine sandy loam. Shallow and deep gullies have formed in places. Runoff is rapid, and the soil is susceptible to further erosion if it is not protected by perennial sod vegetation.

This soil is not extensive. Much of it was once cultivated, but most of it is now in trees. Capability unit A3 VIIe–1.

Augusta series

This series consists of somewhat poorly drained, nearly level soils on stream terraces. These soils developed on old alluvium that was washed mainly from soils on the Piedmont. In local areas this alluvium has an admixture of material that was washed from the soils on the Coastal Plain. The native vegetation was oak, hickory, elm, maple, holly, gum, and some pine.

These soils have a surface soil of light brownish-gray to very dark grayish-brown silt loam or very fine sandy loam. Their subsoil is light olive-brown silty clay or silty clay loam that is mottled with very dark brown and light brownish gray. These soils are strongly acid throughout the profile.

Augusta soils occur with the Wickham, Altavista, and Roanoke soils. They are more poorly drained than the Wickham and Altavista soils and are better drained than the Roanoke soils. They do not have color horizons that are so distinct as those of the Wickham and Altavista soils.

Only one unit in the Augusta series is mapped in Montgomery County. Most of this soil is on low stream terraces along the Alabama and Tallapoosa Rivers. The largest areas are near Hunter and Madison.

Augusta silt loam and fine sandy loam (0 to 2 percent slopes) (Ad).—The following describes a profile of Augusta silt loam in a moist wooded area:

- A_1 0 to 5 inches, very dark grayish-brown (10YR 3/2) silt loam that is colored considerably by organic matter; weak, fine to medium, granular structure; very friable when moist and slightly hard when dry; strongly acid; gradual, smooth boundary.
- A_3 5 to 9 inches, grayish-brown (2.5Y 5/2) silt loam with a few, fine, distinct mottles of very dark brown (10YR 2/2); weak, medium, granular structure; very friable when moist and slightly hard when dry; strongly acid; clear, smooth boundary.
- B_2 9 to 25 inches, light olive-brown (2.5Y 5/6) silty clay to silty clay loam with common, fine, distinct mottles of light brownish gray (2.5Y 6/2) and very dark brown (10YR 2/2); firm when moist and hard when dry; very weak, fine, subangular blocky structure; strongly acid; gradual, smooth boundary.
- B_3 25 to 34 inches, distinctly mottled olive-yellow (2.5Y 6/6), gray (2.5Y 6/0), and yellowish-brown (10YR 5/8) silty clay; weak, fine, subangular blocky structure to massive (structureless); firm when moist and hard when dry; contains a few small, brown concretions of iron or manganese; strongly acid; gradual, smooth boundary.
- C 34 to 46 inches +, mottled olive-yellow (2.5Y 6/6), gray (2.5Y 6/0), and yellowish-brown (10YR 5/8) silty clay; contains hard, red (2.5YR 4/8) peds; massive (structureless); firm when moist and hard when dry; many concretions of iron or manganese; strongly acid.

In cultivated areas the color of the surface soil is gray. Mica flakes are common throughout the profile in those areas where most of the alluvium was washed from the Piedmont. The amount of manganese and iron concretions varies from place to place. About 15 percent of the acreage in this mapping unit is Augusta fine sandy loam.

Augusta silt loam and fine sandy loam have a high water table, especially during winter and spring. Runoff and internal drainage are moderate to slow. These soils are moderately low in organic matter and in fertility.

Use and management.—Most of the acreage has been cleared and used for crops. Much of it has reverted to forest, and some is used for pasture. These soils are suited to only a narrow range of crops. They are better suited to pasture and certain hay crops than they are to crops that require tillage. Row crops often fail completely. In some areas it is feasible to remove surface water by dead-furrow and shallow-ditch drainage. Pine trees grow very well on these soils. Capability unit A3–IIIw 2.

Bibb series

In this series are nearly level, somewhat poorly drained or poorly drained, strongly acid soils. These soils developed from material that sloughed or was washed from surrounding soils on the Coastal Plain. They are mainly along or at the head of narrow drainageways, but in a few places they are in sinkholes surrounded by better

drained soils. These soils are dominantly gray, but they vary considerably in color and texture. The native vegetation is gum, elm, live oak, water oak, beech, and some pine.

Bibb soils occur with many of the soils on stream terraces and on uplands. They do not have definite horizons like those in the soils with which they occur.

Although several types of Bibb soils occur in Montgomery County, they are mapped together as one mapping unit. The total acreage of these soils is small. Except in the prairie section, these soils are widely distributed throughout the county.

Bibb soils, local alluvium phases (0 to 3 percent slopes) (Ba).—The following describes a fine sandy loam that is in a moist cultivated field:

A_{1p} 0 to 8 inches, dark-gray (10YR 4/1) fine sandy loam; weak, crumb structure; very friable; medium acid; gradual, smooth boundary.

A_e 8 to 18 inches, gray (10YR 6/1) light sandy clay loam mottled with yellowish brown (10YR 5/8) and dark brown (10YR 4/3); very weak, medium, subangular blocky structure; very friable when moist and slightly sticky when wet; strongly acid; gradual, smooth boundary.

C_g 18 to 40 inches, intensely mottled gray (10YR 5/1) pale brown (10YR 6/3) and dark grayish-brown (10YR 4/2) fine sandy clay loam; weak, medium, subangular blocky structure; friable when moist and sticky when wet; strongly acid.

The surface soil of this mapping unit ranges from light gray to dark gray in color and from fine sandy loam to silt loam in texture. The subsoil is almost uniformly gray in some places. Its texture ranges from sandy clay loam to silty clay. In the wetter areas, the soils are finer textured than they are in the drier areas and the subsoil is generally light gray tinged with blue. Most areas of these soils receive seepage water from the adjoining hills. Water may stand in some depressions for a long time, especially in winter.

These soils are low to medium in natural fertility and contain a small to medium amount of organic matter. The permeability of the subsoil is slow.

Use and management.—Part of the acreage has been cleared and is used for crops and pasture. Sugarcane, corn, vegetables, and other summer crops are grown. The pasture is primarily carpetgrass and annual lespedeza but includes some dallisgrass. Capability unit A3–IVw–1.

Boswell series

In this series are moderately deep, moderately well drained, strongly acid soils. These soils are on the uplands where they developed on nearly level to steep slopes from acid clays and sandy clays. The native vegetation is loblolly pine, shortleaf pine, and mixed hardwoods. These soils have a dark grayish-brown, loamy surface soil and a red fine sandy clay subsoil.

Boswell soils occur with the Shubuta, Cuthbert, Sawyer, and Susquehanna soils. They have a finer textured and more plastic B horizon than the Shubuta soils and a finer textured and redder B horizon than the Sawyer soils. Their B horizon is thicker than that of the Cuthbert and Susquehanna soils.

The Boswell soils are among the most extensive soils in the county. Most of the acreage is in a wide belt that extends across the county from east to west just south of the prairie section.

Boswell fine sandy loam, eroded nearly level phase (1 to 3 percent slopes) (BcB2).—The following describes a profile in a wooded area that is covered by young trees:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; abrupt, wavy boundary.

B_2 6 to 18 inches, dark-red (10R 3/6) fine sandy clay with very few, fine, distinct mottles of light olive brown; moderate, fine, subangular blocky structure; clay skins on ped surfaces; firm when moist, sticky when wet, and hard when dry; strongly acid; clear, wavy boundary.

B_{21} 18 to 25 inches, red (10R 4/8) fine sandy clay mottled with yellowish brown (10YR 5/4) and light brownish gray (10YR 6/2); moderate, fine, subangular blocky structure; clay skins on ped surfaces; firm when moist, very sticky when wet, and hard when dry; strongly acid; gradual, wavy boundary.

B_{22} 25 to 35 inches, intensely mottled red (10R 4/8), gray (10YR 6/1), and yellowish-red (5YR 4/8) fine sandy clay; moderate, fine, subangular blocky structure; some peds are angular blocky; firm when moist, very sticky when wet, and hard when dry; clay skins on ped surfaces; strongly acid; gradual, wavy boundary.

C 35 to 50 inches, gray (10YR 6/1) fine sandy clay with common, coarse, red (2.5YR 4/8) mottles and a few light olive-brown (2.5Y 5/6) mottles; moderate, medium, subangular and angular blocky structure; some fine sand along structure lines; friable when moist, very sticky when wet, and hard when dry; strongly acid.

The surface soil ranges from light brownish gray in cultivated fields to very dark grayish brown in wooded areas. In eroded areas where the surface and subsurface layers have been mixed through cultivation, the surface soil is reddish brown. The B_2 horizon ranges from 6 to 15 inches in thickness and from fine sandy clay to clay in texture. In some areas, particularly in wooded or undisturbed areas, there is a thin A_2 layer. The thickness of the solum ranges from 25 to 50 or more inches.

In some areas the underlying material at a depth of 5 or 6 feet is loamy sand or sand. This is true north of Pine Level. In some places where this soil is adjacent to the soils on the prairie, the underlying material at a depth of 6 or 7 feet is soft marl or Selma chalk.

This soil is low in organic matter and in natural fertility. It has slow infiltration and moderately high capacity for holding available moisture. The permeability of the subsoil is slow. The plow layer has rather poor tilth. This soil responds moderately well to good management, especially to additions of lime and phosphate.

Use and management.—This soil is used for pasture, hay, pine trees, and some intertilled crops. Moderate yields of cotton, corn, and oats can be obtained under good management, but the soil is best suited to pasture, hay, and trees. Capability unit A3–IIIe–3.

Boswell fine sandy loam, eroded very gently sloping phase (3 to 5 percent slopes) (BcC2).—This soil has essentially the same profile characteristics as Boswell fine sandy loam, eroded nearly level phase. Because it is more sloping than the eroded nearly level phase, it has greater runoff and a greater hazard of erosion. A few shallow gullies have formed in places.

This is the most extensive Boswell fine sandy loam in the county. It needs fairly intensive conservation if it is to produce adequately when it is cultivated. It is best suited to pasture, perennial hay, or pine trees. Almost

half of the acreage is wooded, and less than one-fifth is in row crops. Capability unit A3–IVe–2.

Boswell fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (BcD2).—This soil is more strongly sloping than Boswell fine sandy loam, eroded nearly level phase. It has a pale-brown or gray surface soil, which is lighter colored than that of the eroded nearly level phase. It does not hold so much available moisture as the nearly level phase, and it is not so fertile. This soil, however, responds well to fertilizer. A few gullies have formed, and the hazard of further erosion is high.

This soil needs intensive conservation if it is to produce adequate yields. Yields, however, are only moderate. Probably the best uses for this soil are growing pasture, perennial hay, or trees. More than one-half of the acreage is in trees, and less than one-tenth is in row crops. Capability unit A3–VIe–1.

Boswell clay loam, severely eroded nearly level phase (1 to 3 percent slopes) (BbB3).—This soil differs from Boswell fine sandy loam, eroded nearly level phase, in color and texture of the surface soil. Remnants of the original fine sandy loam surface soil have been mixed with the upper part of the sandy clay subsoil to form the present clay loam surface soil. The surface soil is dominantly reddish brown.

This soil has poorer tilth than Boswell fine sandy loam, eroded nearly level phase. It also has slower infiltration and more rapid runoff. Consequently, this soil is not so well suited to cultivation as the Boswell fine sandy loams but is suited to about the same kinds of pasture.

This is the least extensive Boswell soil in the county. More than one-half of the soil is in trees, and a small acreage is cultivated. Tilth and the rate of infiltration can be improved by additions of organic matter. This soil needs intensive measures of erosion control for its protection. Capability unit A3–IVe–2.

Boswell clay loam, severely eroded very gently sloping phase (3 to 5 percent slopes) (BbC3).—This soil has lost most of its original surface soil through erosion. The remnants of the original surface soil have been mixed into the upper part of the profile to form a clay loam surface soil, which is dominantly reddish brown. Except in the surface soil, the profile characteristics of this soil are essentially the same as those of Boswell fine sandy loam, eroded nearly level phase.

More than one-half of this soil is now in trees, less than 5 percent is cultivated, and about 25 percent is in pasture. This soil should be kept in sod vegetation or trees. Capability unit A3–VIe–1.

Boswell clay loam, severely eroded gently sloping phase (5 to 8 percent slopes) (BbD3).—Most of the original sandy loam surface soil of this severely eroded soil has been washed away, and many shallow and deep gullies have formed. Infiltration is slow and runoff is very rapid.

This soil is not suitable for crops or even hay. Under good management that includes controlled grazing, fair pasture can be maintained. Less than 5 percent of this soil is cultivated, but some of this small acreage is reverting to woodland or to permanent pasture. Capability unit A3–VIIe–1.

Boswell clay loam, severely eroded, 8 to 20 percent slopes (BbE3).—This soil has a grayish-brown to reddish-brown surface soil. The depth to the intensely mottled layers is less than in Boswell fine sandy loam, eroded nearly level phase. Runoff is very rapid, and further erosion is a severe hazard. Included with this soil are small areas that have 2 or 3 inches of the original fine sandy loam surface soil remaining.

This soil makes up about 30 percent of the total acreage in Boswell soils. It needs very exacting conservation if it is to be used for any other purpose than growing pine trees. Capability unit A3–VIIe–1.

Bowie series

This series consists of moderately deep, moderately well drained, level to gently sloping soils. These soils occur on the upland on beds of unconsolidated sands and sandy clays. They have a grayish-brown fine sandy loam surface soil and a yellowish-brown sandy clay loam subsoil. Their reaction is strongly acid. The native vegetation is mainly loblolly and shortleaf pines but includes some oak and sweetgum.

These soils occur with the Lakeland, Klej, and Ruston soils. They are less sandy than the Lakeland and Klej soils. They are more yellowish brown in the subsoil than the Ruston soils and more compact and mottled in the substratum.

Bowie soils have a small total acreage, most of which is south and southwest of Pine Level. The soils are used for crops and pasture, but some cleared areas have reverted to pine trees.

Bowie fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (BdB).—The following describes a profile in a moist cultivated field:

A_{1p} 0 to 8 inches, grayish-brown (2.5Y 5/2) fine sandy loam; very weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; clear, smooth boundary.

B_1 8 to 18 inches, light yellowish-brown (2.5Y 6/4) fine sandy loam; weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; gradual, smooth boundary.

B_2 18 to 34 inches, yellowish-brown (10YR 5/6) to light olive-brown (2.5Y 5/6) sandy clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

B_3 34 to 44 inches, yellowish-brown (10YR 5/6) sandy clay loam with common, medium, distinct mottles of red (2.5YR 5/8), yellowish red (5YR 5/6), and gray (10YR 6/1); mottles are red in the center and yellowish red on the exterior; weak, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

C 44 to 60 inches, mottled yellowish-brown (10YR 5/6), yellowish-red (5YR 5/6), red (2.5YR 5/6), and gray (10YR 6/1) sandy clay loam; mottles are medium and distinct; some firm peds with red interiors and yellowish-red exteriors; moderate, medium, subangular blocky structure; firm when moist and hard when dry; very strongly acid.

The surface soil ranges from 6 to 15 inches in thickness. Included with this soil are areas that have a sandy loam to loamy sand surface soil. Also included are small areas of Norfolk and Savannah soils. The Norfolk and Savannah soils are not mapped in this county. Near the Savannah inclusions, this soil has a weakly cemented B_3 horizon and is somewhat transitional to the Savannah soils.

This soil has moderately rapid infiltration and permeability, especially above depths of 30 to 40 inches. It has a moderate capacity for holding available moisture. It is low in organic matter and in natural fertility. The

plow layer is susceptible to heavy leaching, but this soil responds moderately well to fertilizer.

Use and management.—This is the most extensive Bowie soil. Almost 90 percent of the acreage has been cleared and cropped. More than one-half of this cleared acreage is still used for cotton, corn, peanuts, and other row crops. Some of the soil is in pasture, and some has reverted to pine forest. This soil produces moderately high yields under good management. Capability unit A3–IIe–3.

Bowie fine sandy loam, level phase (0 to 2 percent slopes) (BdA).—Except for the difference in slope, this soil has essentially the same characteristics as Bowie fine sandy loam, very gently sloping phase. Runoff and the hazard of erosion are slightly less than on the very gently sloping phase. Capability unit A3–IIe–3.

Bowie fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (BdB2).—This soil has a thinner surface soil than Bowie fine sandy loam, very gently sloping phase. It also has slower infiltration and more rapid runoff. Because the original surface layer and the subsurface layer have been mixed through tillage, the color of the surface soil now ranges from grayish brown to light olive brown.

This soil is suited to about the same kinds of crops as the very gently sloping phase and responds to management in about the same way. If this soil is cultivated, it needs moderate conservation. Capability unit A3–IIIe–3.

Bowie fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (BdC2).—This soil has a thinner surface soil and a thinner solum than Bowie fine sandy loam, very gently sloping phase. The plow layer, 4 to 5 inches thick, is a mixture of the original surface soil and the upper part of the subsoil. In most places it is light olive brown. Below depths of 28 to 30 inches is compact mottled material. There are a few shallow gullies, and a few small areas have lost most of the original surface soil. Included with this soil are a few small areas with slopes as mild as 3 percent and other small areas with slopes as strong as 12 percent.

Because this soil has slower infiltration and more rapid runoff than the very gently sloping phase, it has a greater erosion hazard. Intensive conservation is needed where the soil is cultivated. Most of this soil is better suited to permanent sod crops than it is to row crops. Capability unit A3–IVe–2.

Bowie fine sandy loam, eroded very gently sloping thin solum phase (2 to 5 percent slopes) (BeB2).—The following describes a profile in a moist cultivated field:

- A_p 0 to 7 inches, grayish-brown (2.5Y 5/2) to light olive-brown (2.5Y 5/4) fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, wavy boundary.
- B_2 7 to 18 inches, brownish-yellow (10YR 6/8) fine sandy clay loam; very weak, medium, subangular blocky structure; very friable; strongly acid; clear, wavy boundary.
- B_3 18 to 23 inches, mottled brownish-yellow (10YR 6/8) and red (2.5YR 4/8) sandy clay loam; mottles are medium and prominent; moderate, fine to medium, subangular blocky structure; friable when moist and hard when dry; strongly acid; abrupt, smooth boundary.
- D 23 to 40 inches, mottled dark reddish-brown (2.5YR 3/4), yellowish-brown (10YR 5/8), and gray (10YR 6/1), cemented sandy clay loam; mottles are coarse and distinct, massive (structureless); extremely firm when moist and extremely hard when dry; strongly acid.

The depth to the underlying cemented sandy clay loam ranges from 18 to 25 inches. A few iron concretions are scattered throughout the profile.

Use and management.—This soil has about one-half its acreage in crops. The rest is about equal amounts of woods, idle land, and pasture. This soil is suited to about the same kinds of crops as Bowie fine sandy loam, eroded very gently sloping phase, but it is not so productive. Because of the underlying cemented material, erosion is a decided hazard and the soil is not well suited to deep-rooted perennials. Although this soil is low in organic matter, it responds well to good management. Capability unit A3–IIIe–3.

Bowie fine sandy loam, eroded gently sloping thin solum phase (5 to 8 percent slopes) (BeC2).—Except for the difference in slope, this soil has the same characteristics as Bowie fine sandy loam, eroded very gently sloping thin solum phase. It is suited to the same kinds of crops. Runoff is greater than on the eroded very gently sloping thin solum phase, and more intensive conservation is needed. Capability unit A3–IVe–2.

Byars and Myatt series

The soils of these two series occur together in such intricate patterns that it is not feasible to map them separately. They are mapped together in a single mapping unit—Byars and Myatt soils. These soils are nearly level, moderately deep to deep, and poorly drained. They have developed from alluvium. The native vegetation is sweetgum, blackgum, cypress, maple, bay, and some pine.

These soils are associated mainly with the Leaf, Stough, Izagora, Waugh, and Flint soils and, to a lesser extent, with the Geiger soils that occur on the prairie. They have a darker colored surface soil than any of the associated soils. Byars and Myatt soils occur on lower positions and are more poorly drained than any of the associated soils except the Geiger. They are more acid than the Geiger soils and somewhat lighter textured.

These soils are moderately extensive in Montgomery County. Most of the acreage is in the northern part of the county, but there is a sizable acreage along the larger creeks in the southern part. About 60 percent is wooded, and the rest is in pasture or is idle. Only a small acreage is used for cultivated crops.

Byars and Myatt soils (0 to 2 percent slopes) (Bf).—A profile in a moist, wooded area of Byars soil that has a fine sandy loam surface soil is described as follows:

- A_1 0 to 4 inches, dark-gray to very dark gray (10YR 4/0 to 3/0) fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, smooth boundary.
- A_{2g} 4 to 14 inches, gray (10YR 5/1) fine sandy loam with a few, medium, faint mottles of light yellowish brown (10YR 6/4) and dark grayish brown (10YR 4/2); moderate, medium, crumb structure; very friable; strongly acid; gradual, smooth boundary.
- B_{2g} 14 to 32 inches, gray (10YR 5/1) fine sandy clay with common, medium, faint mottles of pale brown (10YR 6/3) and brown (10YR 5/3); weak, medium, subangular blocky structure; firm when moist, plastic when wet, and hard when dry; strongly acid; gradual, smooth boundary.
- C_g 32 to 44 inches, gray (2.5Y 5/0) clay with common, fine, faint mottles of light brownish gray (2.5Y 6/2) and light olive brown (2.5Y 5/4); massive (structureless); very firm when moist, very plastic when wet, and very hard when dry; strongly acid.

A profile in a moist wooded area of Myatt soil that has a fine sandy loam surface soil is described as follows:

A_1 0 to 3 inches, dark grayish-brown (10 YR 4/2) fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, smooth boundary.

A_{2g} 3 to 18 inches, gray (10YR 5/1) sandy clay loam with a few, medium, faint mottles of yellowish brown (10YR 5/4); very weak, medium subangular blocky structure; friable when moist and slightly plastic when wet; strongly acid; gradual, smooth boundary.

B_{2g} 18 to 34 inches, gray (10YR 6/1) sandy clay loam to sandy clay with common, medium, faint mottles of pale brown (10YR 6/3) and light yellowish brown (2.5Y 6/4); weak, medium, subangular blocky structure to massive (structureless); firm when moist, plastic when wet, and hard when dry; strongly acid; gradual, smooth boundary.

C_g 34 to 46 inches, gray (2.5Y 5/0) sandy clay with common, medium, faint mottles of pale yellow (2.5Y 7/4) and light olive brown (2.5Y 5/4); massive (structureless); very firm when moist, very plastic when wet, and very hard when dry; strongly acid.

In slight depressions, this soil generally has a very dark gray surface soil. In some places a very weak fragipan has formed at depths ranging from 20 to 28 inches. Some areas have a sandy loam subsoil that extends to depths of more than 30 inches. Included are a few small areas that have a silt loam surface soil.

Byars and Myatt soils have moderate to moderately slow permeability in the upper part of the profile and slow permeability in the lower part. Runoff is slow, and some areas remain ponded for several days after heavy rains. These soils are low in natural fertility. Although the undisturbed surface layer contains a considerable amount of organic matter, this organic matter is quickly dissipated when the soils are cultivated.

Use and management.—Because of the poor drainage, the use of these soils is restricted. They are best suited to woodland and summer pasture, but some areas can produce good yields of sugarcane and sorghum. They are fairly well suited to summer truck crops. Capability unit A3–IVw–1.

Cahaba series

This series consists of deep, well-drained, strongly acid soils that are level to gently sloping. These soils developed from old alluvium that was washed mainly from light-colored, sandy soils on the uplands. They have a grayish-brown fine sandy loam surface soil and a yellowish-red sandy clay loam subsoil. In this county much of the acreage in Cahaba soils has a gravelly substratum at depths ranging from 3 to 8 feet. The native vegetation is mainly loblolly pine but includes a few oaks, blackgum, and sweetgum.

The Cahaba soils are moderately extensive. Most of the acreage is in the northern part of the county on stream terraces along the Alabama and Tallapoosa Rivers. These soils occur with the Amite, Independence, and Wickham soils. They are less brown in the surface soil than the Amite soils and are less red in the subsoil. Their profile does not contain so much sand as that of the Independence soils. They differ from the Wickham soils in not containing material that was washed from the Piedmont.

Cahaba soils that occur just west of Merry are 20 to 30 feet higher than the Cahaba soils in the rest of the county. These areas contain more fine sediments than do most areas of Cahaba soils and have a slightly higher capacity for holding available moisture. In a few small areas, they have a yellowish brown subsoil. West of Merry, the Cahaba soils are similar to the Faceville soils on uplands; but in most places in the county, they are similar to the Ruston soils. Faceville soils are not mapped in this county.

Cahaba fine sandy loam, level phase (0 to 2 percent slopes) (CaA).—The following describes a profile in a moist cultivated field:

A_p 0 to 7 inches, dark grayish-brown (10YR 4/2) fine sandy loam; very weak, fine, crumb structure; very friable; medium acid; clear, smooth boundary.

B_1 7 to 14 inches, dark-brown (7.5YR 4/4) fine sandy loam; moderate, medium, crumb structure; very friable; strongly acid; gradual, smooth boundary.

B_2 14 to 32 inches, yellowish-red (5YR 4/6) sandy clay loam; weak, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

B_3 32 to 42 inches, yellowish-red (5YR 4/8) light sandy clay loam; very weak, medium, subangular blocky structure; very friable; strongly acid; gradual, smooth boundary.

C 42 to 52 inches, strong-brown (7.5YR 5/6) sandy loam with a few medium, distinct mottles of yellowish brown (10YR 5/6); structureless; very friable; strongly acid.

The surface soil is gray or pale brown in places. It ranges from 6 to 16 inches in thickness. The subsoil ranges from reddish brown to strong brown. Where this soil occurs with the Independence soil, its subsoil may be a heavy fine sandy loam. The depth to the gravelly substratum ranges from 3 to 8 feet. Included with this soil are small areas of the Bienville soils. Bienville soils are not mapped separately in Montgomery County.

The soil is low in organic matter and in natural fertility. It has a moderately high infiltration rate and moderately high capacity for holding available moisture. The permeability of the subsoil is moderately rapid.

Use and management.—Practically all of this soil has been cleared and used for row crops. Most of this acreage is now in row crops, but some has been seeded to pasture. This soil has few limitations to use. It is well suited to crops generally grown in the county. If it is adequately fertilized and otherwise well managed, this soil has good yields. Capability unit A3–I–1.

Cahaba fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (CaB2).—This soil has a thinner and lighter colored surface soil than Cahaba fine sandy loam, level phase, but it is similar to the level phase in most other profile characteristics. Included with this soil are a few small areas of Bienville soils.

This soil is suited to about the same kinds of crops as the level phase but is not so productive. It needs somewhat more exacting management than the level phase. Capability unit A3–IIe–1.

Cahaba fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (CaC2).—This sloping soil is in narrow strips between more nearly level areas on one side and drainageways on the other. It has a thinner and lighter colored surface soil than Cahaba fine sandy loam, eroded very gently sloping phase. In places the subsoil is strong brown instead of yellowish red. Runoff is more rapid than that on the other phases of Cahaba fine sandy loam. A few shallow gullies have formed in places.

This soil needs intensive management if it is to produce adequate yields. Yields are normally lower than they are on the other Cahaba soils. Many areas of this soil are well suited to permanent pasture. Capability unit A3–IIIe–1.

Catalpa series

In this series are deep, moderately well drained, calcareous soils that occur on the flood plains in the prairie section of the county. These soils have formed from alluvium that was washed mainly from the Sumter, Houston, and other upland soils on the prairie. Catalpa soils have a dark olive-gray clay surface soil and a very dark grayish-brown clay subsoil. The native vegetation is elm, hackberry, ash, oak, and gum.

Only one Catalpa soil is mapped in Montgomery County. This soil is adjacent to the calcareous Leeper, Tuscumbia, and West Point soils. In smaller areas it is adjacent to the slightly acid Kaufman soil. It is the best drained member of the Catalpa-Leeper-Tuscumbia catena. It contains less material that was washed from acid soils on the prairie than do the Leeper and Tuscumbia soils. The Catalpa is more likely to be flooded than the West Point soils, which are darker colored than the Catalpa.

Catalpa clay (0 to 2 percent slopes) (Cb).—The following describes a profile of this soil in a moist wooded area:

- A_1 0 to 12 inches, dark olive-gray (5Y 3/2) clay; moderate, medium, granular structure; friable when moist, very plastic when wet, and hard when dry; medium alkaline; gradual, smooth boundary.
- A_{12} 12 to 28 inches, very dark grayish-brown (2.5Y 3/2) clay with a few faint mottles of black (5Y 2/1) and olive gray (5Y 4/2); weak, medium, granular structure; firm when moist, very plastic when wet, and hard when dry; medium alkaline; gradual, smooth boundary.
- C 28 to 40 inches +, olive-gray (5Y 4/2) clay with a few faint mottles of very dark grayish brown (2.5Y 3/2); massive (structureless); firm when moist, very plastic when wet, and hard when dry; medium alkaline.

The surface soil ranges from dark olive gray to very dark grayish brown. In places a few white nodules of lime occur throughout the profile. Included with this soil are some areas of silty clay.

Catalpa clay contains moderately large amounts of organic matter and of most plant nutrients. Most of this soil is likely to be flooded frequently. Runoff and internal drainage are moderately slow.

Use and management.—Most of the acreage has been cleared and is used for pasture or hay; some is planted to corn. Although this soil is susceptible to flooding, it is among the best soils in the county for growing hay and summer pasture. It is very well suited to whiteclover, dallisgrass, and johnsongrass. It responds very well to phosphate and potash fertilizers. Capability unit A6–IIw–1.

Chastain series

In this series are poorly drained, strongly acid, plastic soils on first bottoms along streams. These soils were formed mainly from fine sediments washed from the Boswell, Susquehanna, Cuthbert, and other nearby soils. They have a grayish-brown to very dark brown surface soil that varies in texture from place to place. Their subsoil is highly mottled sandy clay. The native vegetation is oak, hickory, gum, ash, elm, and some pine.

The Chastain soils in Montgomery County are mapped in one unit. Most of this mapping unit, which is inextensive, is in the southern part of the county. It is similar to the Leaf soils on stream terraces. It is associated primarily with soils in poorly drained sandy alluvium, but it is more uniform in color and texture than these soils and is finer textured in the subsoil.

Chastain soils (0 to 2 percent slopes) (Cc).—Following is a profile of very fine sandy loam that is in a moist pasture:

- A_1 0 to 2 inches, very dark brown (10YR 2/2) very fine sandy clay loam containing a considerable amount of organic matter; moderate, medium, granular structure; friable when moist and sticky when wet; strongly acid; clear, smooth boundary.
- A_{12} 2 to 7 inches, dark-brown (10YR 4/3) fine sandy clay with common, fine, faint mottles of gray (10YR 5/1) and very dark brown (10YR 2/2); moderate, medium, granular to weak, fine, subangular blocky structure; sticky when wet, friable when moist, and hard when dry; strongly acid; gradual, smooth boundary.
- C_{1g} 7 to 18 inches, intensely mottled olive-brown (2.5Y 4/4), gray (2.5Y 5/0), and very dark grayish-brown (10YR 3/2) fine sandy clay with many, fine, distinct mottles; massive (structureless); very sticky when wet, hard when dry, and firm when moist; strongly acid; diffuse boundary.
- C_{2g} 18 to 42 inches +, same characteristics as C_{1g} horizon except soil material is more gray as depth increases.

This mapping unit has a surface soil that ranges from sandy loam to silty clay loam in texture and from gray to very dark brown in color. It is moderately low in organic matter and in fertility and remains wet until late in spring. Small areas of Urbo soils are included. Urbo soils were not mapped separately in this county.

Use and management.—Almost one-half of this mapping unit has been cleared. The cleared acreage is used chiefly for pasture, but some is in hay meadows and some is in corn. Wherever practical, this soil should be protected from floodwaters and the water table lowered. These soils need additions of lime, phosphate, and potash and respond well to these amendments. Capability unit A3–IVw–1.

Chewacla series

In this series are deep, somewhat poorly drained to moderately well drained, strongly acid soils on nearly level flood plains. These soils developed in material that was washed mainly from the soils on the Piedmont and, in this county, partly from soils on the Coastal Plain. Their surface soil is brown silt loam, and their subsoil is gray to grayish-brown, mottled silty clay loam. The native vegetation is oak, elm, gum, and alder.

Only one Chewacla soil is mapped in Montgomery County. This soil occurs with the Congaree and Wehadkee soils. It is less well drained and more intensely mottled than the Congaree soils and is browner and less intensely mottled than the Wehadkee soil. Nearly all of the Chewacla soil is along the Alabama and Tallapoosa Rivers in the northern part of the county. About one-fourth the acreage has been cleared and is used mainly for pasture.

Chewacla silt loam (0 to 2 percent slopes) (Cd).—The following describes a profile of this soil in a moist pasture area:

A_{1p} 0 to 8 inches, brown (10YR 5/3) silt loam; moderate, medium, granular structure; friable when moist and slightly plastic when wet; strongly acid; gradual, smooth boundary.

AC 8 to 18 inches, dark grayish-brown (10YR 4/2) silty clay loam with common, fine mottles of gray (10YR 5/1) and very dark brown (10YR 2/2); structureless; friable when moist and hard when dry; strongly acid; gradual, smooth boundary.

C_g 18 to 42 inches, gray (10YR 5/1) silty clay loam mottled with yellowish brown (10YR 5/6) and dark grayish brown (10YR 4/2); is increasingly gray with increasing depth; structureless; friable when moist and hard when dry; strongly acid.

This soil is moderately permeable and has a moderately high capacity for holding available water. It is moderately high in organic matter and natural fertility. Although this soil has good tilth, it is susceptible to flooding and has slow internal drainage.

Use and management.—Because of the hazard of flooding and the slow internal drainage, this soil is limited in its use. It is used mainly for corn, summer hay, and pasture. Yields are high if this soil is well managed. Capability unit A3–IIIw–1.

Congaree series

In this series are deep, well-drained, strongly acid soils on nearly level flood plains. These soils developed in alluvium that was washed from soils on the Piedmont and soils on the upper part of the Coastal Plain. Congaree soils have a surface soil of brown to dark grayish-brown silt loam or fine sandy loam. Their subsoil is dark-brown silt loam to silty clay loam. The native vegetation is oak, elm, gum, and alder.

These soils occur with the Chewacla and Wehadkee soils and are the best drained soils in the Congaree-Chewacla-Wehadkee catena. They are more uniformly brown or yellowish brown than the Wehadkee soils, which are gray. They differ from the Chewacla soil in being almost free of mottles. The Congaree soils are similar to the Ochlockonee soil, which was developed from material on the Coastal Plain.

These soils are in fairly large areas along the Alabama and Tallapoosa Rivers in the northern part of the county. Most of the acreage has been cleared, and much of the cleared area is cultivated.

Congaree silt loam (0 to 2 percent slopes) (Cf).—This soil contains some mica throughout the profile. The following describes a profile in a moist cultivated field:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, medium, granular structure; very friable when moist and slightly sticky when wet; strongly acid; gradual, smooth boundary.

AC 6 to 20 inches, dark yellowish-brown (10YR 4/4) silty clay loam; massive (structureless); friable when moist and slightly plastic when wet; strongly acid; gradual, smooth boundary.

C_1 20 to 32 inches, dark-brown (10YR 4/3) silty clay loam to silty clay; massive (structureless); friable when moist and slightly plastic when wet; strongly acid; gradual, smooth boundary.

C_2 32 to 50 inches, yellowish-brown (10YR 5/4) silty clay faintly mottled with very dark grayish brown (10YR 3/2); massive (structureless); firm when moist and hard when dry; strongly acid.

In some undisturbed areas the color of the upper 2 or 3 inches of this soil is very dark grayish brown. Included are small areas that have a silty clay loam surface soil. These inclusions are firmer throughout the profile than Congaree silt loam or Congaree fine sandy loam.

This soil is moderately permeable and has a moderately high capacity for holding available moisture. It is high in organic matter and is one of the most fertile soils in the county. The sediments that are deposited by floodwater almost every year add to the fertility. The tilth is good.

Use and management.—More than 80 percent of this soil has been cleared, and half of this cleared acreage is cropland. Corn, grain sorghum, summer hay, and pasture are the main crops. Yields are high under good management. The suitability of this soil for crops is somewhat limited by the risk of flooding during winter and by the rank growth of some crops, such as cotton, in summer. Capability unit A3–IIw–2.

Congaree fine sandy loam (0 to 2 percent slopes) (Ce).—The following describes a profile of this soil in a moist cultivated field:

A_p 0 to 8 inches, brown (10YR 5/3) fine sandy loam; moderate, medium, crumb structure; very friable; strongly acid; gradual, smooth boundary.

AC 8 to 20 inches, dark yellowish-brown (10YR 4/4) loam; very weak structure, or almost structureless (massive); very friable; strongly acid; gradual, smooth boundary.

C 20 to 42 inches, brown (10YR 5/3) silt loam; very weak structure, or almost structureless (massive); very friable; strongly acid.

Included with this soil are small areas that have a sand or loamy sand surface soil as much as 15 inches thick. The sandier inclusions are nearest the streams.

Congaree fine sandy loam has more rapid permeability and better tilth than Congaree silt loam. It has about the same natural fertility as the silt loam and about the same flood hazard.

Use and management.—This soil is suited to about the same uses as the silt loam and responds to management in about the same way. Capability unit A3–IIw–2.

Cuthbert series

In this series are shallow, gently sloping to steep, strongly acid soils. These soils are moderately well drained; their surface layer is excessively drained. They have developed from beds of clay that contain lenses of sand. Their surface soil varies from place to place in texture and thickness. It is mainly grayish-brown sandy loam, and the subsoil is reddish-brown fine sandy clay. The native vegetation is loblolly and shortleaf pines and mixed hardwoods.

Most of the acreage in Cuthbert soils is in the southern third of the county. These soils occur with the Lakeland, Boswell, Shubuta, Bowie, Susquehanna, and Ruston soils. In places they occur with the Lakeland and Boswell soils in such intricate patterns or on such steep slopes that it is not practical to map the soils separately. The subsoil of the Cuthbert soils is thinner and more compact than that of the Shubuta or Ruston soils and is more compact and less plastic than that of the Boswell soils.

Cuthbert fine sandy loam, eroded gently sloping phase (2 to 8 percent slopes) (CgC2).—The following describes a profile of this soil:

A_1 0 to 5 inches, grayish-brown (10YR 5/2) fine sandy loam; very weak, fine, crumb structure; nearly loose; strongly acid; clear, wavy boundary.

A_3 5 to 8 inches, brown (10YR 5/3) heavy, fine sandy loam;

moderate, fine, crumb structure; very friable; strongly acid; clear, wavy boundary.

B_2 8 to 13 inches, reddish-brown (5YR 5/4) fine sandy clay with a few fine mottles of gray (5YR 5/1); moderate, medium, subangular blocky structure; firm when moist, plastic when wet, and very hard when dry; strongly acid; clear, wavy boundary.

C 13 to 38 inches, thin beds of clay and lenses of sand that are mottled red (2.5YR 4/8), gray (10YR 6/1), brownish yellow (10YR 6/6), and yellowish red (5YR 5/8); mottles are mostly coarse with no definite pattern; massive (structureless); strongly acid.

In some places in the southwestern part of the county, soft marl (Selma chalk) occurs at depths ranging from 8 to 10 feet and chalk crops out on some of the steeper slopes. In local areas many iron crusts are on the surface and some are in the soil. In small areas next to the Lakeland soils, the A horizon is as much as 30 inches thick. The B horizon ranges from 4 to 10 inches in thickness.

Included with this soil are some uneroded areas that have a sandy loam to loamy sand surface soil and some severely eroded areas that have a sandy clay to clay surface soil.

Cuthbert fine sandy loam, eroded gently sloping phase, is low in natural fertility. It has low infiltration, slow permeability, and a low capacity for holding available moisture. Runoff is excessive, and erosion is a serious hazard.

Use and management.—This soil is poorly suited to row crops, and yields of these crops are low. The less severely eroded areas can grow good pasture under good management. Pine trees are better suited to this soil than row crops or pasture. Capability unit A3–VIe–1.

Cuthbert soils, severely eroded, 8 to 30 percent slopes (ChE3).—This mapping unit has a wide range in degree of erosion, thickness of the surface layer, development of the profile, texture, and slope. Most areas are severely eroded, and some have deep to shallow gullies. Included with these severely eroded soils are small slightly eroded and moderately eroded areas. The thickness of the surface soil ranges from 0 to 30 inches. On the steeper slopes, the horizons of the soils are not so strongly developed as are those on the more nearly level areas. In many places no B horizon has developed, or it is only 3 or 4 inches thick. The texture of the surface soil ranges from loamy sand to clay.

These soils have a total area of less than 3,000 acres. Because slopes are strongly sloping or steep, runoff is rapid, and erosion is likely, these soils are severely limited in their use for row crops or pasture. They are better suited to trees. Capability unit A3–VIIe–1.

Cuthbert, Lakeland, and Boswell soils

Small areas of these soils are closely intermingled, and a large part of the acreage is on steep slopes. For this reason, the soils in the separate series cannot be shown on a map of the scale used. They are mapped together as groups of undifferentiated soils.

These groups of soils are on slopes that range from 2 to 30 percent, but the dominant slope range is 12 to 20 percent. Except in the severely eroded areas, the surface soil is mainly grayish-brown sandy loam or loamy sand. The subsoil of the Boswell and Cuthbert soils is red to yellowish-red sandy clay to sandy clay loam, but it varies considerably in color and texture. In the Lakeland soils, loamy sand extends from the surface to depths that range from 18 inches to several feet. Where the loamy sand is thin, it is underlain by material similar to the parent material of the Cuthbert soils. In other areas the underlying material is similar to that underlying the Ruston soils. The native vegetation is mixed hardwoods and pines.

These groups of soils have a total acreage of about 20,000 acres. The mapping units are widely distributed throughout the southern third of the county; the largest areas are in the ridge section. The ridge section is a fairly wide belt of steep hills, called rough, hilly land, that crosses the county from east to west between the prairie section and the smoother part of the Coastal Plain.

Less than one-tenth of the acreage has been cleared, and little of this is now cultivated. Most of the cleared acreage has reverted to pine trees.

For a profile description of a Cuthbert soil, see Cuthbert fine sandy loam, eroded gently sloping phase; for one of a Lakeland soil, see Lakeland loamy fine sand, 0 to 5 percent slopes; and for one of a Boswell soil, see Boswell fine sandy loam, eroded nearly level phase.

Cuthbert, Lakeland, and Boswell soils, eroded, 2 to 12 percent slopes (CkD2).—Most of this mapping unit has a grayish-brown fine sandy loam surface soil about 3 to 8 inches thick. The Lakeland soil, however, has a light brownish-gray loamy sand surface soil about 18 inches to several feet thick. The subsoil of the Cuthbert and Boswell soils ranges from red to yellowish red in color and from sandy clay to sandy clay loam in texture. The underlying material of the Lakeland soil is yellowish-red to strong-brown sandy clay loam.

Most of the acreage in this mapping unit has a few shallow to deep gullies. Runoff is fairly high. Areas with coarser textured subsoil have more rapid permeability and infiltration than areas with finer textured subsoil.

This soil is not suited to row crops, but some of the less sloping and less eroded areas will produce fair pasture if they are well managed. Capability unit A3–VIe–1.

Cuthbert, Lakeland, and Boswell soils, 12 to 30 percent slopes (CkE).—This mapping unit is not so severely eroded as the other units of Cuthbert, Lakeland, and Boswell soils, because its somewhat coarse texture increases infiltration and permeability and decreases runoff. But these soils have a severe erosion hazard because slopes are steep. The natural fertility is low.

These soils have a smaller total acreage than the other units of Cuthbert, Lakeland, and Boswell soils. They are best suited to pine trees. Capability unit A3 VIIe–1.

Cuthbert, Lakeland, and Boswell soils, eroded, 12 to 30 percent slopes (CkE2).—These soils have essentially the same profile characteristics as the other phases of Cuthbert, Lakeland, and Boswell soils. Mainly because of the steep slopes and erosion, most of the acreage is used for pine trees. These soils are not suited to row crops or pasture. Capability unit A3–VIIe–1.

Cuthbert, Lakeland, and Boswell soils, severely eroded, 12 to 30 percent slopes (CkE3).—Except in areas of Lakeland soil, these soils have had most of their original surface soil removed by erosion. These severely eroded areas have a sandy clay loam or sandy clay surface soil. Runoff is excessive, and moisture relations are

not so good as they are in other phases of Cuthbert, Lakeland, and Boswell soils.

Almost all of this mapping unit is used for pine trees. Because of the low moisture content, the pines grow slower on these soils than on the other phases of Cuthbert, Lakeland, and Boswell soils. Capability unit A3–VIIe–1.

Eutaw series

This series consists of moderately deep to deep, somewhat poorly drained and poorly drained, strongly acid soils. These soils are in nearly level areas in the prairie section of the county. They developed on fine-textured sediments that were deposited over Selma chalk. They have a very dark grayish-brown fine sandy loam or clay surface soil and a highly mottled gray clay subsoil. The native vegetation is predominantly oak but includes some shortleaf pine and gum.

The Eutaw soils are associated with the Oktibbeha and Vaiden soils, which are less poorly drained than the Eutaw soils and are better developed. The gray subsoil of the Eutaw soils differs from the yellowish-brown subsoil of the Vaiden soils and the red subsoil of the Oktibbeha soils.

The Eutaw soils are among the least extensive soils in the county. The largest acreage is near Pike Road and Cecil, but small areas are scattered throughout the prairie section. Locally areas of Eutaw soils are called post-oak prairies, crawfish prairies, and sometimes, hogwallow land.

Eutaw clay (0 to 4 percent slopes) (Ea).—The following describes a profile of this soil in a moist pasture:

- A_p 0 to 5 inches, very dark grayish-brown (2.5Y 3/2) clay; moderate, medium, granular structure; firm when moist, very plastic when wet, and hard when dry; medium acid; clear, wavy boundary.
- B_{1g} 5 to 8 inches, mottled gray (2.5Y 6/0), very dark grayish-brown (2.5Y 3/2), and light olive-brown (2.5Y 5/4) clay; moderate, fine, subangular blocky structure; firm when moist, very plastic when wet, and very hard when dry; strongly acid; gradual, wavy boundary.
- B_{2g} 8 to 28 inches, intensely mottled gray (10YR 6/1), yellowish brown (10YR 5/6), light olive-brown (2.5Y 5/6), and brown (10YR 5/3) clay; weak, medium, subangular blocky structure to massive (structureless); firm when moist, very plastic when wet, and very hard when dry; strongly acid; gradual, wavy boundary.
- C_g 28 to 44 inches, light olive-brown (2.5Y 5/6) clay with common, medium, distinct mottles of gray (2.5Y 6/0); massive (structureless); firm when moist, very plastic when wet, and very hard when dry; strongly acid; gradual, wavy boundary.
- D_{ca} 44 to 52 inches, light olive-brown (2.5Y 5/6) clay mixed with white, weathered chalk containing numerous hard, white nodules of lime; massive (structureless); firm when moist, plastic when wet, and hard when dry; moderately alkaline.

The surface soil varies from very dark grayish brown to gray. The amount and color of the mottles also vary. The depth to the underlying partially weathered chalk ranges from 42 inches to 60 inches or more. Included with this soil is a very small eroded acreage.

This soil is moderately low in natural fertility. It has slow to very slow infiltration and permeability. On much of the acreage, runoff is slow. The capacity for holding available moisture is moderately high. This soil has poor tilth and dries slowly in spring.

Use and management.—About one-half of this soil has been cleared and is used mainly for pasture; some hay is also grown. This soil has a narrow range of uses because of its somewhat poor drainage and its fine texture. Under good management that includes surface drainage and fertilization, the yields of pasture grasses are moderate to high during summer. Capability unit A6–IVw–1.

Eutaw fine sandy loam (0 to 4 percent slopes) (Eb).—Except that it is coarser in the surface soil, this soil has essentially the same profile characteristics as Eutaw clay. It is suited to the same kinds of crops as Eutaw clay and needs about the same management. It has a dark-gray to dark grayish-brown surface soil that ranges from 3 to 6 inches in thickness. The texture of the surface soil is nearly a silt loam in areas that receive considerable runoff from adjoining soils. Included with this soil is a very small acreage that is eroded. Capability unit A6–IVw–1.

Flint series

This series consists of moderately deep, moderately well drained, strongly acid soils on stream terraces. These soils are level to gently sloping. They developed on fine-textured old alluvium that was washed mainly from soils on the Coastal Plain. In some places in Montgomery County, this alluvium contains material that was washed from Piedmont soils and from soils in the prairie section. The Flint soils have a light brownish-gray fine sandy loam surface soil and a yellowish-red to red sandy clay subsoil. The native vegetation is loblolly and shortleaf pines, sweetgum, blackgum, and mixed oaks.

These soils are associated with the Waugh, Izagora, Cahaba, and Wickham soils. Their yellowish-red to red subsoil differs from that of the Waugh soils, which is yellowish brown and is not so plastic in the lower part. The Flint soils are less friable than the Cahaba soils. They are somewhat better drained than the Izagora soils and are less friable in the subsoil. They differ from the Wickham soils in having a more compact subsoil and in not containing so much mica.

The Flint soils are not extensive. Most of their acreage is along the stream terraces in the northern part of the county. More than one-half the total acreage has been cleared and is used for row crops and pasture.

Flint fine sandy loam, level phase (0 to 2 percent slopes) (FaA).—The following describes a profile of this soil in a moist cultivated field:

- A_p 0 to 4 inches, light brownish-gray (2.5Y 6/2) fine sandy loam; weak, fine, crumb structure; very friable when moist and loose when dry; medium acid to strongly acid; clear, wavy boundary.
- A_3 4 to 8 inches, yellowish-brown (10YR 5/6) heavy fine sandy loam; very weak, medium, subangular blocky structure; very friable; strongly acid; clear, wavy boundary.
- B_2 8 to 15 inches, yellowish-red (5YR 5/8) fine sandy clay to clay; moderate, medium, subangular blocky structure; firm when moist, very hard when dry, and sticky when wet; strongly acid; gradual, wavy boundary.
- B_3 15 to 27 inches, yellowish-red (5YR 4/8) fine sandy clay with common, medium mottles of light yellowish brown (2.5Y 6/4) and red (2.5YR 4/8); moderate, medium, subangular blocky structure; firm when moist, very hard when dry, and sticky when wet; strongly acid; gradual, wavy boundary.
- C 27 to 45 inches, intensely mottled yellowish-red (5YR 4/8), red (2.5YR 4/8), light yellowish-brown (2.5Y 6/4), and gray (10YR 6/1) fine sandy clay; weak to moderate,

medium, subangular blocky structure; firm when moist, very hard when dry, and sticky when wet; very strongly acid; clear, smooth boundary.

D 45 to 60 inches, reddish-yellow (7.5YR 6/8) heavy fine sandy loam with common, medium mottles of red (2.5YR 4/8) and gray (10YR 6/1); weak structure to massive (structureless); very friable when moist and slightly hard when dry; very strongly acid.

In a few areas the surface soil is 15 inches thick. Its color ranges from light brownish gray to dark grayish brown. The subsoil ranges from strong brown to red in color and from sandy clay to clay in texture. The depth to the mottled material ranges from 15 to 30 inches. In a few areas, at depths of 5 to 8 feet, there is a substratum of gravel or loose sand and gravel. The reaction is medium acid in some places that have an admixture of material that was washed from the soils in the prairie section. In places that have an admixture of material washed from the Piedmont, the profile contains some mica flakes.

Use and management.—Most of this soil is used for row crops, mainly cotton, corn, and vegetables. Some of it is in pasture. Because the subsoil is fine textured and firm, the growth of roots is impeded. This soil must be tilled at proper times because it puddles if tilled when wet and breaks into clods if tilled when dry. If adequate fertilizer and organic matter are added and the soil is otherwise well managed, it will produce high yields. Capability unit A3–IIe–2.

Flint fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (FaB2).—This soil is similar to Flint fine sandy loam, level phase, in profile characteristics, but it has a thinner surface soil, which is brown or yellowish brown instead of light brownish gray. The infiltration is slower than on the level phase and runoff is more rapid. The tilth and natural fertility are somewhat less.

This soil is suited to about the same kinds of crops as the level phase, but it needs more exacting management and more intensive conservation. Capability unit A3–IIIe 2.

Flint fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (FaC2).—This is the least extensive Flint soil in the county. It has more rapid runoff than the other Flint soils and a greater hazard of erosion. Included with this soil are a few areas with slopes that are steeper than 8 percent and a few small areas where most of the surface soil has been lost.

This soil is suited to about the same kinds of crops as the other Flint soils, but it needs more exacting management and more intensive conservation. Capability unit A3–IVe–2.

Geiger series

In this series are moderately deep, somewhat poorly drained and poorly drained soils. These soils are nearly level and are medium acid to strongly acid. They occur on stream terraces, where they developed on old alluvium that was washed from the prairie section and from other parts of the Coastal Plain. They have a dark grayish-brown silty clay surface soil and a subsoil of mottled gray, strong-brown, and yellowish-brown clay.

These soils are widely distributed along the large streams in the prairie section and along some of the streams that flow into other parts of the Coastal Plain. The Geiger soils are associated with the Kipling soils on stream terraces and with the Leeper, Tuscumbia, Una, and Kaufman soils on flood plains in the prairie section. They are similar to the Myatt soils, but, in most places, are less acid and much finer textured throughout the profile. In color and drainage the Geiger soils are similar to the Eutaw soils that occur in that part of the prairie locally called post-oak prairie. They are less well drained than the Kipling soils.

Geiger soils are not extensive. Most of the acreage is used for pasture.

Geiger silty clay (0 to 3 percent slopes) (Ga).—The following describes a profile of this soil in a moist idle area:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) silty clay with few, fine, faint mottles of dark brown (7.5YR 3/2) and few, medium, faint mottles of gray (10YR 6/1); moderate, medium, granular structure; very plastic when wet; medium acid to strongly acid; clear, smooth boundary.

B_2 6 to 15 inches, intensely mottled gray (10YR 6/1), yellowish-brown (10YR 5/8), strong-brown (7.5YR 5/8), and dark brown (7.5YR 4/4) silty clay to clay; weak, fine, subangular blocky structure; very plastic when wet and hard when dry; medium acid to strongly acid; gradual, smooth boundary.

B_{3g} 15 to 24 inches, gray (2.5Y 6/0) clay with fine, distinct mottles of strong brown (7.5YR 5/8); weak, fine, subangular and angular blocky structure; very plastic when wet and hard when dry; strongly acid; gradual, smooth boundary.

C_g 24 to 45 inches, gray (2.5Y 6/0) clay with many, medium, distinct mottles of strong brown (7.5YR 5/8); massive (structureless); very plastic when wet and very hard when dry; strongly acid; gradual, smooth boundary.

B_b 45 to 60 inches, brownish-yellow (10YR 6/8) clay mottled with gray (2.5Y 6/0); massive (structureless); very plastic when wet and very hard when dry; strongly acid, numerous root stains and channels.

This soil has horizons that vary in thickness and in degree of mottling. The reaction generally ranges from medium acid to strongly acid, but, in some places, the material is alkaline below depths of 5 to 8 feet.

Geiger silty clay has moderately slow permeability and moderately high capacity for holding available moisture. It is wet until late in spring and is rather difficult to till, but it responds well to fertilizer.

Use and management.—Almost one-half of the acreage is woodland. This soil is suited to hay and pasture but its use for crops is limited. In many places the use of shallow-ditch or dead-furrow drainage is economically feasible. Capability unit A6–IVw–1.

Geiger silty clay, overwash variant (0 to 3 percent slopes) (Gb).—This soil covers a total of about 4 or 5 square miles. The largest area is about 1½ miles north of Catoma School. In most places this soil is nearly level. It is on alluvium that was washed primarily from Sumter and Houston soils. The following describes a profile in a moist pasture:

A_{1p} 0 to 12 inches, very dark gray (2.5Y 3/0) silty clay; moderate, medium, granular structure; hard when dry and very plastic when wet; medium alkaline; gradual, smooth boundary.

B_{2b} 12 to 30 inches, mottled yellowish-brown (10YR 5/8), light olive-brown (2.5Y 5/4), and gray (2.5Y 6/0) silty clay; massive (structureless); very plastic when wet and hard when dry; slightly acid to medium acid; gradual, smooth boundary.

B_{3b} 30 to 42 inches, gray (2.5Y 6/0) clay mottled with yellowish brown (10YR 5/8) and light olive brown (2.5Y 5/4); massive (structureless); medium acid.

The surface soil ranges from 10 to 18 inches in thickness and from very dark gray to olive gray in color This soil contains more organic matter than Geiger silty clay and has higher natural fertility.

Use and management.—Almost all of this soil is used for pasture. It produces higher yields of pasture than Geiger silty clay and is better suited to whiteclover. Capability unit A6–IIIw–2.

Geiger very fine sandy loam (0 to 3 percent slopes) (Gc).—Except for the texture of the surface soil, this soil has about the same profile characteristics as Geiger silty clay. Its grayish-brown surface soil ranges from 3 to 7 inches in thickness. Sand has accumulated in the B_2 horizon in old root channels, cracks, and wormholes; it has drifted down from the surface soil.

This soil is suited to about the same kinds of crops and pasture plants as Geiger silty clay and needs about the same management. Capability unit A6–IVw-1.

Gullied land

This land has been mapped as Gullied land, acid materials, and Gullied land, calcareous materials.

Gullied land, acid materials (Gd).—This land consists of severely gullied areas that have acid soil materials. The Shubuta, Ruston, Bowie, Amite, Boswell, Sawyer, and Cuthbert soils were once dominant in these areas. These areas have an intricate pattern of deep gullies, most of which cannot be crossed with modern farm machinery. Most of the gullies have penetrated into the underlying unconsolidated parent material and are still active. The original surface soil is still in place between the gullies in some areas.

The dominant slopes are 10 to 20 percent. Slopes, however, range from as little as 2 percent to as much as 30 percent. Runoff is very rapid on the steep areas.

Use and management.—Most of the acreage in this land is not cultivated. In a few places, especially where the gullies are not very close, fair stands of pasture are grown. Some of the acreage could be reclaimed for pasture by filling the gullies, seeding adequately, adding fertilizer, and diverting excess water. In most places, however, reclamation is not economically feasible. In these areas it is best to plant pine trees. Capability unit A3–VIIe–1.

Gullied land, calcareous materials (Ge). This land consists of areas in the prairie section that are severely gullied and have calcareous soil materials. The dominant soils in these areas were Sumter clays and Sumter-Oktibbeha-Vaiden clays. Although the gullies have penetrated the partly weathered or unweathered Selma chalk, this material does not slough and cave in as does the unconsolidated parent material of Gullied land, acid materials. Therefore, this land is not so difficult to manage.

The dominant slopes are 3 to 15 percent, but slopes range from as little as 2 percent to as much as 20 percent.

Use and management.—Most of this land can be reclaimed by filling the gullies, keeping the land in grain for 2 or 3 years, adequately fertilizing, and then planting suitable grasses and clovers. Many areas have fair yields of grasses and clovers between the gullies, particularly if the areas have been adequately fertilized and otherwise well managed. Capability unit A6–VIe–1.

Houston series

In this series are deep, moderately well drained, calcareous soils. These soils are on uplands in the prairie section of the county. They developed from marl and from the calcareous clays of Selma chalk. Their surface soil is very dark gray clay, and their subsoil is olive-gray to dark olive-gray clay. The native vegetation is elm, hackberry, and Osage-orange. Areas of Houston soils are locally called black prairie land.

Houston soils occur mainly with the Sumter and West Point soils and, in some places, with the Oktibbeha and Vaiden soils. They have a darker colored subsoil than the Sumter soils and are generally less sloping. Houston soils are lighter colored than the West Point soils, which were formed on local alluvium.

Only one Houston soil is mapped in Montgomery County. This soil has a small total acreage. Most of it is in the vicinity of London and southeast of Pinedale Church.

Houston clay, eroded nearly level phase (1 to 3 percent slopes) (HaB2).—The following describes a profile of this soil in a moist pasture:

- A_1 0 to 10 inches, very dark gray (5Y 3/1) clay; moderate, medium, granular structure; friable when moist, very plastic when wet, and slightly hard when dry; moderately alkaline; gradual, smooth boundary.
- A_{12} 10 to 28 inches, dark olive-gray (5Y 3/2) clay; weak, medium, granular to weak, fine subangular blocky structure; firm when moist, very plastic when wet, and hard when dry; moderately alkaline; gradual, smooth boundary.
- AC 28 to 42 inches, light olive-gray (5Y 6/2) clay with common, medium mottles of olive gray (5Y 4/2); weak, fine, subangular blocky structure to massive (structureless); firm when moist, very plastic when wet, and hard when dry; moderately alkaline; gradual, smooth boundary.
- C 42 to 50 inches, pale-yellow (5Y 7/4) clay or soft marl with few, coarse, distinct mottles of light olive brown (2.5Y 5/4); massive (structureless); firm when moist, plastic when wet, and hard when dry; moderately alkaline.

The surface soil ranges from very dark grayish brown to dark olive brown. In the A_{12}, AC, and C horizons are many soft and hard nodules of lime. The depth to the underlying Selma chalk varies from 24 to 40 inches or more. Included with this soil are small areas that have slopes of 3 to 5 percent. Also included are small areas of Hunt and Pachuta soils. Hunt and Pachuta soils are not mapped separately in this county.

Houston clay, eroded nearly level phase, contains a moderate amount of organic matter and most plant nutrients. It is slowly permeable and has rapid runoff after the soil is saturated. This soil cracks when it dries. In some of the horizons, the sides of some of the structural aggregates are slick. Crayfish have built many mounds, or chimneys, on this soil, which are a hazard when pastures are mowed.

Use and management.—Most of this soil is cleared and used mainly for pasture and hay. It remains wet until late in spring and is not well suited to alfalfa or small grain. It is well suited to whiteclover and dallisgrass and is one of the best soils in the county for pasture and for johnsongrass hay. Although it is difficult to till because it is fine textured and plastic, a small part of this soil is used for corn and sorghum. Capability unit A6–IIe–3.

Huckabee series

This series consists of nearly level or very gently sloping, excessively drained soils. These soils are on stream terraces in deep sandy material. They are strongly acid throughout the profile. Their surface soil is gray to grayish-brown loamy sand, and their subsoil is light yellowish-brown loamy sand. The native vegetation is pine and mixed hardwoods.

The Huckabee soils occur with the Independence and Cahaba soils, mostly on the stream terraces along the Alabama and Tallapoosa Rivers in the northern part of the county. In color they differ from the Independence soils, which are reddish. Huckabee soils have a loamy sand surface soil that extends from the surface to depths of more than 30 inches, whereas the sandy loam or loamy sand of the Cahaba soils extends to less than 30 inches.

Only one Huckabee soil is mapped in Montgomery County. This soil has a very small total acreage, most of which is used for crops and pasture.

Huckabee loamy sand, 0 to 5 percent slopes (HbB).—The following describes a profile of this soil in a moist idle area:

- A_p 0 to 8 inches, grayish-brown (10YR 5/2) loamy sand; structureless; loose; strongly acid; gradual, smooth boundary.
- A_3 8 to 24 inches, light yellowish-brown (10YR 6/4) loamy sand; structureless; loose; strongly acid; gradual, smooth boundary.
- C_1 24 to 42 inches, very pale brown (10YR 7/4) loamy sand; structureless; loose; strongly acid; gradual, smooth boundary.
- C_2 42 to 50 inches, very pale brown (10YR 7/3) loamy sand with few, fine, faint mottles of gray (10YR 6/1) and brown (10YR 5/3); structureless; loose; strongly acid.

The surface soil ranges from gray in cultivated areas to dark grayish brown in undisturbed areas. The subsurface layer is pale yellow in places. The loamy sand extends from the surface to depths that vary from 30 to 70 inches. In some areas at depths of 3 or 4 feet are coarse sand and gravel. Included with this soil are small areas with slopes of 5 to 8 percent.

This soil is rapidly permeable, and erosion is not a problem. It is low in organic matter and fertility, and the leaching of mineral fertilizers is excessive. The capacity for holding available moisture is low.

Use and management.—Most of this soil has been cleared and is used for row crops and pasture. The range in crop suitability is fairly wide, but only moderate yields are obtained unless mineral fertilizers are added frequently and cover crops are turned under. Bahiagrass, coastal bermudagrass, and other suitable pasture plants grow well on this soil if it is adequately fertilized. Capability unit A3–IIs–1.

Independence series

In this series are nearly level or very gently sloping, strongly acid, excessively drained soils. These soils are in deep sandy material on the stream terraces. Their surface soil is brown to very dark grayish-brown loamy sand, and their subsoil is reddish-brown to yellowish-red loamy sand. The native vegetation was pines and hardwoods.

These soils are found mainly along the Alabama and Tallapoosa Rivers in the northern part of the county. They are generally associated with the Cahaba and Huckabee soils. In some local areas they are associated with the Wickham soils. The Independence soils are similar to the Cahaba soils in color but are not so fine textured in the subsoil. In texture they are similar to the Huckabee soils, which have a light yellowish-brown or very pale brown subsoil instead of a yellowish-red one like that of the Independence soils.

Only one Independence soil is mapped in Montgomery County. This soil is not extensive. It is used for crops and pasture.

Independence loamy sand, 0 to 5 percent slopes (IaB).—The following describes a profile of this soil in a moist pasture:

- A_1 0 to 9 inches, very dark grayish-brown (10YR 3/2) loamy sand that contains a considerable amount of organic matter; structureless; loose; strongly acid; clear, smooth boundary.
- A_3 9 to 20 inches, dark-brown (10YR 4/3 to 7.5YR 4/4) loamy sand; structureless; loose; strongly acid; gradual, smooth boundary.
- B_1 20 to 32 inches, strong-brown (7.5YR 5/6) to yellowish-red (5YR 4/6) loamy sand; structureless; loose; strongly acid; gradual, smooth boundary.
- B_2 32 to 44 inches, reddish-brown (5YR 4/4) light sandy loam to loamy sand; essentially structureless; very friable to loose; strongly acid; gradual, smooth boundary.
- C 44 to 60 inches, strong-brown (7.5YR 5/6) loamy sand; structureless; loose; strongly acid; abrupt, smooth boundary.
- D 60 to 70 inches, pale-yellow (5Y 7/3) sand; single grain (structureless); loose; strongly acid.

The surface soil ranges from light reddish brown to dark gray or very dark grayish brown. In places sandy clay or sandy clay loam is at depths of 40 to 50 inches. The profile contains mica flakes in areas that have an admixture of material that was washed from the Piedmont. The loamy sand extends from the surface to depths of 30 to 70 inches. In many places coarse sand and gravel lie below depths of 4 to 6 feet.

Included with this soil is one of the largest gravel pits in the county. This gravel pit has an area of about 1 square mile. Also included are small areas of loamy fine sand and a few small patches of Bienville soils that have a loamy sand surface soil. Bienville soils are not mapped separately in Montgomery County. Other inclusions are areas that have 5 to 8 percent slopes.

This soil is highly permeable to roots, air, and water; erosion is not a problem. The content of organic matter and natural fertility are generally low. In some areas, however, the surface soil contains a considerable amount of organic matter. The leaching of mineral fertilizer is excessive. The capacity for holding available moisture is low.

Use and management.—Most of this soil has been cleared and is used for row crops and pasture. This soil is suited to a fairly wide range of crops, but yields are only moderate unless mineral fertilizer is applied frequently and cover crops are turned under. Bahiagrass, coastal bermudagrass, and similar pasture grasses grow well if this soil is adequately fertilized. Capability unit A3–IIs–1.

Iuka series

In this series are deep, moderately well drained, medium acid to strongly acid soils. These soils are nearly level. They are on the flood plains of streams, at the

head of small drains, and in depressions. They developed from rather light textured alluvial material. The Iuka soils on the flood plains developed from general alluvium; those at the head of drains and in depressions developed from local alluvium.

Iuka soils have a surface soil of gray to dark reddish-brown silt loam to sandy loam. Their subsoil is light yellowish-brown to reddish-brown sandy loam to silty clay that is mottled in the lower part. The native vegetation is gum, maple, ash, pine, beech, and some oak and hickory.

The Iuka soils along the flood plains occur mainly with the Ochlockonee and Mantachie soils and, to a lesser extent, with Sandy alluvial land, somewhat poorly drained. They are not so well drained as the Ochlockonee soil and are better drained than the Mantachie soils. They have more uniform profile characteristics, especially texture and color, than Sandy alluvial land, somewhat poorly drained.

Except in the prairie section, Iuka soils are fairly widely distributed throughout the county. They have, however, a very small total acreage. Most of the acreage has been cleared and is used for row crops and pasture.

Iuka soils (general alluvium) (0 to 2 percent slopes) (Ib).—The Iuka soil that is described is in a moist cultivated field and has a silt loam surface soil:

A_{1p} 0 to 12 inches, dark grayish-brown (10YR 4/2) silt loam; very weak, medium, granular structure; very friable when moist; medium acid to strongly acid; gradual, smooth boundary.

A_{12} 12 to 26 inches, brown (10YR 5/3) silt loam with few, fine, faint mottles of grayish brown (10YR 5/2) and pale brown (10YR 6/3); very weak, medium, granular structure; friable when moist and slightly hard when dry; strongly acid; gradual, smooth boundary.

C 26 to 44 inches, grayish-brown (10YR 5/2) silt loam with common, medium mottles of yellowish brown (10YR 5/4), dark gray (10YR 4/1), and gray (10YR 6/1); massive (structureless) to very weak structure; friable when moist and slightly hard when dry; strongly acid.

The texture of the surface layer of these soils varies from fine sandy loam to silt loam or silty clay loam. In some places the lower layers are stratified lenses of sand, sandy loam, silt, silty clay, or sandy clay. In undisturbed areas the surface soil is very dark grayish brown. The depth to and intensity of the mottles vary from place to place. Generally, the mottles occur at depths of 20 to 28 inches.

The Iuka soils have moderately rapid permeability and moderately high capacity for holding available moisture. They contain a large amount of organic matter and are among the most fertile soils in the county. The natural fertility is raised from time to time by sediments deposited by floodwaters. These soils have good tilth, but they are susceptible to flooding, particularly in winter and early in spring.

Use and management.—These soils are somewhat limited in their use by the hazard of flooding. They are further limited by the rank growth of some crops such as cotton. They are well suited to corn, sorghum, summer hay, and pasture grass. Under good management they produce high yields except during years that are wetter or drier than normal. Capability unit A3–IIw–2.

Iuka soils, local alluvium phases (0 to 3 percent slopes) (Ic).—The profile described is in a moist cultivated field that has a silt loam surface soil:

A_{11} 0 to 6 inches, reddish-brown (5YR 4/3) silt loam; very weak, medium, granular structure; friable when moist; medium acid; gradual, smooth boundary.

A_{12} 6 to 24 inches, dark-brown (7.5YR 4/4) silt loam to silty clay loam with a few, medium, faint mottles of brown (7.5YR 5/4) and dark reddish brown (5YR 3/4); structureless; friable when moist and slightly hard when dry; strongly acid; gradual, smooth boundary.

C 24 to 42 inches, dark grayish-brown (10YR 4/2) silty clay loam with many, medium, faint, and distinct mottles of gray (10YR 5/1), dark brown (7.5YR 3/2), and yellowish brown (10YR 5/4); structureless; firm when moist and hard when dry; strongly acid.

The surface soil ranges from silt loam to fine sandy loam in texture and from reddish brown to gray in color. The depth of the deposits of alluvium ranges from 15 to 40 inches or more. The solum is normally much shallower around the perimeter of the areas of deposition than it is elsewhere.

These soils are moderately permeable and have a moderately high capacity for holding available moisture. The natural fertility is high. On some areas water stands for several days, especially during the winter.

Use and management.—Because of their small size and location, many areas of these soils are planted to the same kinds of crops as the surrounding soils. The excess water in Iuka soils, local alluvium phases, causes yields to be lower for some crops than they are on the surrounding soils. If the weather is normal, yields of suitable crops are good. Capability unit A3–IIw–1.

Izagora series

In this series are moderately deep, moderately well drained, strongly acid soils on stream terraces. These soils formed on thin beds of sandy alluvium that was underlain by clayey alluvium. The sandy and clayey alluvium was washed from soils on the uplands. Locally, some areas have an admixture of material washed from soils in the prairie section of the county. Izagora soils have a grayish brown very fine to fine sandy loam surface soil and yellowish-brown to light olive-brown subsoil. The native vegetation was loblolly and shortleaf pines with some oak, hickory, and gum.

These soils occur mainly with the Prentiss, Byars and Myatt, Leaf, and Flint soils. In some local areas they occur with the Kipling and Geiger soils. They have more yellow in the B horizon and are better drained than are the Leaf, Myatt and Byars soils. Their profile does not have a fragipan, although the profile of Prentiss soils does have one. Izagora soils are more friable than the Flint soils, which are brown or red in color. They are better drained, more friable, and coarser textured than the Kipling and Geiger soils.

The Izagora soils have a large total acreage that is widely distributed. The largest areas are in the central part of the county. About one-half of the acreage is in row crops, about one-fourth is in pasture, and the rest is about equally divided as wooded and idle land.

Izagora fine sandy loam, level phase (0 to 2 percent slopes) (IdA).—The following describes a profile of this soil in a moist cultivated field:

A_p 0 to 6 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak, fine, crumb structure; very friable; medium acid to strongly acid; clear, smooth boundary.

A_2 6 to 11 inches, pale-olive (5Y 6/3) fine sandy loam with a few splotches of grayish brown (2.5Y 5/2); very fri-

able; weak, medium, crumb structure; strongly acid; clear, smooth boundary.

B_2 11 to 22 inches, light olive-brown (2.5Y 5/6) fine sandy clay loam with a few, fine mottles of gray (2.5Y 6/0) and strong brown (7.5YR 5/8); friable when moist, slightly sticky when wet, and slightly hard when dry; weak, medium, subangular blocky structure; strongly acid; clear, smooth boundary.

B_3 22 to 32 inches, mottled yellowish-red (5YR 4/8), light olive-brown (2.5Y 5/6), gray (2.5Y 6/0), and yellowish-brown (10YR 5/8) fine sandy clay loam; mottles are fine to medium and distinct; moderate, fine to medium, subangular blocky structure; friable when moist, hard when dry, and sticky when wet; strongly acid; gradual, smooth boundary.

C 32 to 48 inches +, mottled red (2.5YR 4/8), light-gray (10YR 7/1), yellowish-brown (10YR 5/8), and strong-brown (7.5YR 5/6) fine sandy clay; massive (structureless); firm when moist, hard when dry, and very plastic when wet; strongly acid.

The surface soil ranges from dark grayish brown to light brownish gray. The A horizon is 15 inches thick in a few small scattered areas. The B horizon ranges from yellow to yellowish brown. In places where there is an admixture of material from the prairie section, the reaction is medium acid. The depth to the underlying heavy clay material ranges from 20 to 35 inches. Included with this soil are some areas that have a sandy loam or very fine sandy loam surface soil.

This soil has a moderate capacity for holding available moisture. Its subsoil is permeable to roots, air, and moisture, but the firm underlying material restricts the use of this soil for deep-rooted plants. The fertility and content of organic matter are low.

Use and management.—During years of normal rainfall, this soil is fairly well suited to most row crops commonly grown in the county. Except for some deep-rooted perennials, it is well suited to most pasture grasses and legumes. Yields are moderate under good management. Most areas can be improved by artificial drainage. Capability unit A3 IIIw–2.

Izagora fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (IdB).—This soil has essentially the same profile characteristics as Izagora fine sandy loam, level phase. Runoff, however, is greater than on the level phase, and crops are not injured so much during wet periods. This soil is suited to about the same kinds of crops as the level phase. Capability unit A3-IIIw 2.

Izagora fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (IdC2).—This soil is in narrow strips next to first bottoms. It has a light yellowish-brown surface soil. Runoff is greater than it is on Izagora fine sandy loam, level phase, and infiltration is less. Consequently, this soil has a thinner surface soil and is less fertile than the level phase. Included with this soil are a few severely eroded areas.

This soil has a narrower range of use than the other Izagora soils in the county. It is best suited to permanent vegetation or to plants that are used for wildlife food and cover, mainly because of the size and location of areas of this soil. Capability unit A3–IIIw–2.

Kaufman series

This series consists of deep, moderately well drained, neutral to slightly acid soils that are nearly level. These soils developed on stream flood plains from material that was washed from both acid and alkaline soils on the upland in the prairie section. They have a very dark grayish-brown clay loam surface soil and a very dark-gray clay to silty clay subsoil. The native vegetation is elm, ash, hackberry, Osage-orange, and some oak.

Kaufman soils occur primarily with the Una soils and Mixed alluvial land and, to a lesser extent, with the Catalpa, Leeper, and Tuscumbia soils. Kaufman soils are better drained than the Una soils, the Mixed alluvial land, and the Tuscumbia soils. They are more acid than the Tuscumbia, Leeper, and Catalpa soils, which are neutral to moderately alkaline.

Only one soil in the Kaufman series is mapped in Montgomery County. It is fairly widely distributed throughout the prairie section. About one-half of the acreage is in trees, and the rest is about equally divided between pasture and hay meadows.

Kaufman clay loam (0 to 2 percent slopes) (Ka).—The following describes a profile of this soil in moist cropland:

A_{1p} 0 to 14 inches, very dark grayish-brown (2.5Y 3/2) to black (2.5Y 2/0) clay loam; weak, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; neutral to slightly acid; gradual, smooth boundary.

A_2 14 to 36 inches, dark olive-gray (5Y 3/2) silty clay with few, medium, faint to distinct mottles of grayish brown (2.5Y 5/2); no definite structure; firm when moist, very hard when dry, and very plastic when wet; slightly acid; diffuse, smooth boundary.

C 36 to 52 inches, grayish-brown (2.5Y 5/2) silty clay with many, medium, faint to distinct mottles of very dark grayish brown (2.5Y 3/2) and olive (5Y 4/3); massive (structureless); firm when moist, very hard when dry, and very plastic when wet; medium acid.

The surface soil ranges from dark brown to almost black. In places the profile is somewhat stratified with lenses of clay, sandy clay, and, in a few places, with thin lenses of sandy loam. In a few small areas, the surface soil is slightly alkaline to a depth of 3 or 4 inches because the recently deposited overwash material is alkaline. Included with this soil are a few small areas that have a clay surface soil.

Kaufman clay loam has moderately slow permeability and moderately slow runoff. It is likely to be flooded frequently. It has moderately high capacity for holding available moisture and is moderately high in natural fertility and in organic matter.

Use and management.—This soil is best suited to pasture and hay. If it is adequately fertilized, planted to suitable crops, and otherwise well managed, this soil produces good yields. Capability unit A6–IIw–1.

Kipling series

In this series are deep, somewhat poorly drained, medium acid soils that are level or nearly level. They have developed on stream terraces, mainly in the prairie section, from sediments washed from acid and alkaline materials.

These soils have a surface soil of grayish-brown very fine sandy loam or dark grayish-brown silty clay. The upper subsoil is yellowish-brown silty clay or clay, or dark yellowish-brown clay. In the lower subsoil are gray mottles. The native vegetation is water oak, white oak, hickory, sweetgum, blackgum, elm, and some loblolly and shortleaf pines.

Kipling soils occur mainly with the Geiger soils and, to a lesser extent, with the Izagora and Leaf soils. They are generally at higher elevations and are somewhat better drained than the Geiger soils and are less gray in the subsoil. Kipling soils are better drained and less acid than the Leaf soils. They are somewhat more poorly drained and less acid than the Izagora soils.

The Kipling soils have a moderately large total acreage. They are fairly well distributed throughout the prairie section; most of the acreage is along Catoma Creek and its tributaries. Almost nine-tenths of the acreage has been cleared. About half of the cleared acreage is in pasture, and about half is cultivated.

Kipling silty clay (0 to 3 percent slopes) (Kb).—The following describes a profile of this soil in a moist pasture:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) silty clay with few, fine, faint mottles (mostly organic stains) of very dark brown (10YR 2/2); moderate, medium, granular structure; friable when moist and very plastic when wet; medium acid; clear, smooth boundary.

B_1 6 to 14 inches, light olive-brown (2.5Y 5/4) silty clay with common, medium, faint mottles of grayish brown (2.5Y 5/2) and olive (5Y 5/3); weak, medium, subangular blocky structure; friable to firm when moist, very plastic when wet, and hard when dry; medium acid; gradual, wavy boundary.

B_2 14 to 28 inches, gray (2.5Y 5/0) clay mottled with grayish brown (2.5Y 5/2), pale yellow (2.5Y 8/4), and brown (10YR 5/3); mottles are many, medium, and faint; weak, medium, subangular blocky to massive (structureless); strongly acid; gradual, smooth boundary.

C 28 to 44 inches, intensely mottled gray (2.5Y 5/0), grayish-brown (2.5Y 5/2), and light brownish-gray (2.5Y 6/2) clay; massive (structureless); very firm when moist and very hard when dry; strongly acid.

The surface soil is grayish brown to very dark grayish brown. The mottling, especially in the lower horizons, varies from very little to intense. Included with this soil are a few areas that have slopes of 3 to 4 percent.

This soil has slow infiltration and slow permeability. In most places runoff is slow. The capacity for holding available moisture is moderately high. This soil has moderately low natural fertility but responds well to fertilizer. It has poorer tilth than that of Kipling very fine sandy loam, level phase.

Use and management.—This soil is not so well suited to cultivated crops as the very fine sandy loam. It is well suited to pasture and to some hay crops. Capability unit A6–IIIw–3.

Kipling very fine sandy loam, level phase (0 to 1 percent slopes) (KcA).—The following describes a profile of this soil in a moist cultivated field:

A_p 0 to 7 inches, grayish-brown (10YR 5/2) very fine sandy loam; very weak, fine, crumb structure; very friable when moist and nearly loose when dry; medium acid; clear, smooth boundary.

B_2 7 to 16 inches, light yellowish-brown (2.5Y 6/4) fine sandy clay with common, medium, faint mottles of light brownish gray (10YR 6/2); weak, medium, subangular blocky structure; firm when moist, plastic when wet, and hard when dry; medium acid; gradual, smooth boundary.

C 16 to 40 inches, gray (2.5Y 5/0) fine sandy clay to clay with many, fine to medium, faint mottles of light brownish gray (2.5Y 6/2) and pale olive (5Y 6/3); massive (structureless); firm when moist, plastic when wet, and very hard when dry; medium acid to strongly acid.

The surface soil normally ranges from 5 to 10 inches in thickness. It is gray to grayish brown. Included with this soil are a few small areas with a loamy sand surface soil that is as much as 15 inches thick.

This soil has moderate infiltration. The permeability in the lower horizons is slow. The capacity for holding available moisture is moderately high. Natural fertility is low. Although this soil is wet until fairly late in spring, it has better tilth than Kipling silty clay.

Use and management.—This soil has some restrictions to its use, but, under normal moisture content, it produces fair to moderate yields of most crops commonly grown in the county. Capability unit A6–IIIw–3.

Kipling very fine sandy loam, eroded nearly level phase (1 to 3 percent slopes) (KcB2).—Most of this soil is in narrow strips that are next to lower lying Geiger soils or are next to soils on the flood plains. In most places about half of the original sandy surface soil has been washed away.

This soil has less infiltration and greater runoff than Kipling very fine sandy loam, level phase. It is less productive than the level phase but, because of its better surface drainage, can be cultivated somewhat earlier in spring.

Included with this soil is a small acreage that has slopes of 3 to 4 percent and a few small areas where erosion has exposed the sandy clay subsoil.

This soil is suitable for about the same uses as Kipling very fine sandy loam, level phase. Capability unit A6–IIIw 3.

Klej series

In this series are moderately deep, moderately well drained, strongly acid soils that are nearly level to sloping. These soils formed on beds of sand and loamy sand that are underlain by much finer material. Just above the finer material is a weak fragipan. Klej soils have a very dark grayish-brown to grayish-brown loamy sand surface soil. The subsoil is light yellowish-brown loamy sand. The native vegetation is loblolly pine, various oaks, sweetgum, and blackgum. Gallberries and briars make up the understory.

The Klej soils occur mainly with the Lakeland and Bowie soils. To some extent in this county, they also occur with the Cuthbert and Sawyer soils. Klej soils are thinner over the fine-textured substratum than the Lakeland soils. They are coarser textured and looser than the Bowie soils.

These soils have a small total acreage, most of which is south and southwest of Pine Level. More than one-half the acreage has been cleared and is used for row crops and some pasture.

Klej loamy fine sand, compact substratum, 0 to 5 percent slopes (KdB). The following describes a profile of this soil that was observed in a moist fresh road cut next to a pasture:

A_p 0 to 7 inches, very dark grayish-brown (2.5Y 3/2, moist) and gray (2.5Y 6/0, dry) loamy fine sand that contains some organic matter; single grain (structureless); nearly loose; medium acid; clear, smooth boundary.

AC 7 to 14 inches, light olive-brown (2.5Y 5/4) loamy fine sand; single grain (structureless); loose; strongly acid; gradual, wavy boundary.

C_1 14 to 27 inches, light yellowish-brown (2.5Y 6/4) loamy fine sand with few, fine to medium, faint mottlings of olive yellow (2.5Y 6/6) and light brownish gray (2.5Y 6/2); single grain (structureless); loose; strongly acid; clear, wavy boundary.

C_{2m} 27 to 34 inches, light yellowish-brown (2.5Y 6/4) loamy fine sand with few, medium, faint mottles of olive yellow (2.5Y 6/8) and light brownish gray (2.5Y 6/2); weak structure to massive (structureless); very weakly cemented; friable when moist and slightly hard when dry; strongly acid; abrupt, smooth boundary.

B_{2b} 34 to 46 inches, yellowish-brown (10YR 5/8) fine sandy clay loam with medium, distinct mottles of red (2.5YR 4/8); weak, medium, subangular blocky structure; friable when moist and slightly hard when dry; very strongly acid; clear, wavy boundary.

C_b 46 to 60 inches, intensively mottled yellowish-brown (10YR 5/8), very dark gray (10YR 3/1), and red (10R 4/8) to dark-red (10R 3/6) sandy clay loam; strong, massive (structureless); cemented; very firm when moist and extremely hard when dry; very strongly acid.

In cultivated areas the surface soil is gray. The depth to the fine-textured material ranges from 25 to 35 inches. Included with this soil are some areas of Lakeland loamy fine sand, 0 to 5 percent slopes, and a few small areas of Bowie soil that has a thick surface soil.

This soil is normally very low in organic matter and in natural fertility. It has a high rate of infiltration and very rapid permeability in the upper 25 to 30 inches. Therefore, erosion is not a serious problem. Although the capacity for holding available moisture is moderately low, it is not so low as in the Lakeland soils. The leaching of mineral plant nutrients is somewhat excessive.

Use and management.—More than three-fourths of this soil has been cleared and is used for row crops and pasture. Cotton, corn, and peanuts are the main row crops. This soil is especially well suited to peanuts. It produces good yields of suitable pasture crops under good management. Bahiagrass is one of the most suitable grasses. The fertility of this soil can be increased by planting legumes as cover crops and by using a cropping system that provides grasses most of the time. Capability unit A3–IIs–1.

Klej loamy fine sand, compact substratum, 5 to 12 percent slopes (KdC).—This soil has essentially the same profile characteristics as Klej loamy fine sand, compact substratum, 0 to 5 percent slopes, except in a few areas where the depth to the fine-textured material is less than normal. In some of the more sloping areas, the color of the surface soil is a lighter gray than it is in the more nearly level areas. This soil is suited to about the same kinds of crops as the more nearly level phase. The steeper areas of this soil are in trees. Capability unit A3–IVs–1.

Lakeland series

In this series are deep, excessively drained, strongly acid soils that are nearly level to strongly sloping. These soils developed from moderately thick beds of sand and loamy sand that are underlain by finer textured material at variable depths. They have a light brownish-gray loamy sand surface soil and a pale-yellow to light yellowish-brown loamy sand subsoil. The native vegetation is mostly longleaf pine, loblolly pine, and scrubby oak.

Lakeland soils occur primarily with the Ruston, Bowie, and Cuthbert soils. They are sandier than the Ruston and Bowie soils. They are much sandier than the Cuthbert soils. In some places Lakeland soils form a thick cap over material similar to that of the Cuthbert soils.

Most of the acreage in Lakeland soils is fairly widely distributed in the southern part of the county. More than one-half of the more nearly level acreage has been cleared and is used for row crops and pasture, but some of this acreage is reverting to pine trees.

Lakeland loamy fine sand, 0 to 5 percent slopes (LaB).—The following describes a profile of this soil in a moist idle area:

A_{1p} 0 to 8 inches, light brownish-gray (10YR 6/2) loamy fine sand; very weak, fine, crumb structure; very friable when moist and loose when dry; strongly acid; clear, wavy boundary.

B_{11} 8 to 20 inches, pale-olive (5Y 6/4) loamy fine sand; structureless; very friable when moist and loose when dry; strongly acid; gradual, wavy boundary.

B_{12} 20 to 33 inches, pale-yellow (5Y 7/3) loamy fine sand; structureless; very friable when moist and loose when dry; strongly acid; gradual, wavy boundary.

C 33 to 54 inches, light-gray (2.5Y 7/0) fine sand with few, medium, faint mottles of light brownish gray (2.5Y 6/2); single grain (structureless); loose; strongly acid.

The surface soil ranges from grayish brown to light brownish gray. The depth to the underlying finer textured material ranges from 30 inches to several feet. Included with this soil are small areas that have a loamy sand surface soil. Also included are a few small areas similar to Eustis soils, which are soils not mapped separately in this county.

This soil is highly permeable but has a low capacity for holding available moisture. It is low in organic matter and in natural fertility. The leaching of mineral fertilizers and plant nutrients is excessive. Runoff is low, and erosion is not a problem except on the steeper slopes.

Use and management.—This soil is suited to a fairly wide range of crops and pasture plants. It is well suited to peanuts and bahiagrass. Yields are only moderate unless frequent, large applications of mineral fertilizers and organic matter are added. Capability unit A3–IIs–1.

Lakeland loamy fine sand, 5 to 12 percent slopes (LaC).—In most places this soil has essentially the same profile characteristics as Lakeland loamy fine sand, 0 to 5 percent slopes. In some places, however, it has a lighter colored profile, partly because it contains less organic matter. In some places the underlying finer material is at a shallower depth than in the more nearly level phase.

This soil is suited to about the same kinds of crops as the more nearly level phase, but it needs more perennial vegetation. Although erosion is not a serious problem, this soil ought to be managed fairly intensively to prevent gullying. Capability unit A3–IVs–1.

Lakeland loamy fine sand, 12 to 20 percent slopes (LaE).—This soil varies more in the thickness of the sandier layers than the other Lakeland loamy fine sands. Surface runoff is considerably higher and erosion is more of a problem. Many areas have some gullies. In some small areas, the thickness of the loamy sand material is less than 30 inches. This soil is not extensive. Most of it is in trees. Capability unit A3–VIIe–1.

Leaf series

This series consists of moderately deep, poorly drained, strongly acid soils that are nearly level. These soils have developed on stream terraces from material that

was washed mainly from the Boswell, Shubuta, Cuthbert, and Susquehanna soils. They have a gray to dark-gray fine sandy loam surface soil and a mottled fine sandy clay subsoil. The native vegetation is mainly loblolly and shortleaf pines, various oaks, and sweetgum but includes some hickory.

The Leaf soils occur with the Flint, Izagora, and Byars and Myatt soils. They are more poorly drained than the Flint and Izagora soils. Their surface soil is not so dark colored as that of the Byars soils, and they are finer textured than the Myatt soils.

Only one Leaf soil is mapped in Montgomery County. This soil is not extensive, but it is widely distributed in the county. About one-third of this soil is in trees, and the rest is about equally divided between row crops and pasture.

Leaf fine sandy loam (0 to 3 percent slopes) (lb). -The following describes a profile of this soil in a moist cultivated field:

A_p 0 to 5 inches, dark-gray (10YR 4/1) fine sandy loam; weak to moderate, fine, crumb structure; very friable; strongly acid; clear, smooth boundary.

A_2 5 to 12 inches, light brownish-gray (10YR 6/2) fine sandy loam with a few mottles of pale yellow (2.5Y 7/4) and dark gray (10YR 4/1); moderate, medium, crumb structure; very friable; strongly acid; clear, wavy boundary.

B_2 12 to 26 inches, gray (10YR 5/1) fine sandy clay with many, medium, distinct mottles of yellowish brown (10YR 5/6) and pale brown (10YR 6/); weak, fine, subangular blocky structure; firm when moist and plastic when wet; strongly acid; gradual, wavy boundary.

C 26 to 40 inches, mottled gray (10YR 6/1), red (10R 4/8), and strong-brown (7.5YR 5/8) fine sandy clay to clay; massive (structureless); firm when moist, hard when dry, and plastic when wet; strongly acid.

The surface soil ranges from very dark gray in undisturbed areas to light brownish gray in cultivated areas. The subsoil ranges from heavy sandy clay loam to clay. Included with this soil are a few small areas with a silt loam or silty clay loam surface soil.

This soil has a moderately low permeability and slow runoff. During wet periods, water stands on some areas for several days. The capacity for holding available moisture is moderately high. During winter and spring, the water table is high. Except in a few inches of the upper part of the surface soil, natural fertility and the content of organic matter are low.

Use and management.—Most of the cleared acreage is used for pasture. Under good management, this soil has moderate yields of suitable pasture crops, especially during summer. The range in suitable crops is limited by the wetness of this soil. A small acreage is in corn and sorghum. Pine trees grow very well on this soil. Capability unit A3–IVw–1.

Leeper series

In this series are moderately deep to deep, moderately well drained, neutral to calcareous soils that are nearly level. The drainage of these soils is restricted at times by a high water table. These soils formed on stream flood plains from material that was washed from both acid and calcareous soils. They have a very dark gray to almost black silty clay surface soil and a dark gray to dark brown silty clay subsoil. The native vegetation is ash, elm, hackberry, Osage-orange, cottonwood, shagbark hickory, and willow oak.

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The Leeper soils occur mainly with the Catalpa and Tuscumbia soils and, to some extent, with the Kaufman and Una soils. They are intermediate in drainage between the well-drained Catalpa soils and the somewhat poorly drained Tuscumbia soils. They are better drained, darker colored, and less acid than the Una soils. Leeper soils have about the same drainage as the Kaufman soils, which are neutral to slightly acid.

Only one Leeper soil is mapped in Montgomery County. This is the most extensive soil on the flood plain of the prairie section, where it is widely distributed. More than three-fifths of this soil is cleared. It is used mainly for pasture and hay.

Leeper silty clay (0 to 2 percent slopes) (lc).—The following describes a profile of this soil in a moist area used for hay crops:

A_{11} 0 to 12 inches, very dark gray (2.5Y 3/0) silty clay; weak, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; mildly alkaline; gradual, smooth boundary.

A_{12} 12 to 20 inches, very dark gray (5Y 3/1) silty clay; weak, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; mildly alkaline; gradual, smooth boundary.

C_1 20 to 38 inches, mottled dark-gray (10YR 4/1) and dark-brown (10YR 4/3) silty clay; massive (structureless); firm when moist, hard when dry, and very plastic when wet; mildly alkaline; gradual, smooth boundary.

C_2 38 to 50 inches, mottled dark-gray (2.5Y 4/0) and dark-brown (10YR 4/3) silty clay; mottles are large; massive (structureless); firm when moist, hard when dry, and very plastic when wet; neutral.

The surface soil ranges from dark brown to black. In some places, small amounts of very fine sand are along the structural faces. Sandy overwash material that was recently deposited is in some small areas. In some places the lower subsoil consists of thin, stratified lenses of sand and silt. The reaction of this soil ranges from neutral to strongly alkaline.

This soil has slow permeability and runoff and a moderately high capacity for holding available moisture. During prolonged droughts, the soil cracks when it dries. It is likely to be flooded frequently. It has moderately high natural fertility and contains a small amount of organic matter.

Use and management.—This soil is especially well suited to johnsongrass, dallisgrass, and whiteclover. It produces good yields of suitable crops under good management. The range in suitable crops, however, is limited by the susceptibility to flooding. Capability unit A6–IIw–1.

Mantachie series

This series consists of moderately deep, somewhat poorly drained, strongly acid soils that are nearly level. The soils have developed on stream flood plains from material that was washed mainly from coarser textured soils on the Coastal Plain. They have a very dark gray silt loam or sandy loam surface soil and a mottled silt loam to sandy clay loam subsoil. The native vegetation is water oak, beech, sweetgum, maple, willow, alder, and some hickory and white oak.

The Mantachie soils are associated with the Ochlockonee and Iuka soils and with Sandy alluvial land, somewhat poorly drained. They are less well drained than the Iuka and Ochlockonee soils and are more mottled. They have about the same drainage as Sandy

alluvial land, somewhat poorly drained. They are better developed than the Sandy alluvial land and have horizons with more uniform color and texture.

The Mantachie soils in Montgomery County are mapped together as one mapping unit. Except in the prairie section, this mapping unit is widely distributed throughout the county. About half the acreage has been cleared and is in crops and pasture; the rest is woodland.

Mantachie soils (0 to 2 percent slopes) (Ma).—The following describes a profile of this mapping unit observed in a moist wooded area that has a silt loam surface soil:

A_{11} 0 to 1 inch, very dark gray to very dark brown (10YR 3/1 to 2/2, moist) and dark gray (10YR 4/1, dry) silt loam; weak, medium, granular structure; friable when moist and slightly sticky when wet; strongly acid; abrupt, smooth boundary.

A_{12} 1 to 5 inches, dark-brown (10YR 4/3) silty clay loam, with a few, fine, faint mottles of very dark brown (10YR 2/2); weak, coarse, granular structure; friable when moist, slightly hard when dry, and slightly sticky when wet; strongly acid; gradual, wavy boundary.

A_{13} 5 to 12 inches, mottled dark-gray (10YR 4/1) and very dark grayish-brown (10YR 3/2) silty clay loam; weak, coarse, granular structure; friable when moist, slightly hard when dry, and slightly sticky when wet; strongly acid; clear, wavy boundary.

C_{1g} 12 to 18 inches, mottled and streaked gray (10YR 5/1), dark yellowish-brown (10YR 4/4), and dark grayish-brown (10YR 4/2) silt loam with a few thin lenses of very fine sandy loam; structureless; very friable when moist; strongly acid; clear, wavy boundary.

C_{2g} 18 to 40 inches, gray (2.5Y 6/0) sandy loam with common, medium, distinct mottles of very dark grayish brown (10YR 3/2); structureless; very friable; strongly acid.

The surface soil ranges from silty clay loam to sandy loam in texture and from very dark brown to dark gray in color. The subsoil ranges from silt loam to sandy clay loam. In many places the lower layers consist of lenses of silt loam, silty clay loam, sandy loam, or sandy clay loam. The texture of both the surface soil and the subsoil is more uniform along the larger streams than elsewhere.

These soils contain a moderate amount of organic matter and are moderately high in natural fertility. Their permeability is moderate. They are somewhat poorly drained and are susceptible to flooding.

Use and management.—About one-half of the acreage of these soils is in trees, about one-tenth is in row crops, and most of the rest is in pasture. Corn and sugarcane are the main row crops. Because these soils are somewhat poorly drained and are likely to be flooded, their use for row crops is restricted. If these soils are seeded to summer pasture, they will respond fairly well to good management. Capability unit A3–IIIw–1.

Mixed alluvial land

Mixed alluvial land (Mb).—This land consists mainly of fine- and medium-textured general alluvium on the first bottoms and of some local alluvium, generally in narrow strips, along the smaller streams. The alluvium was washed primarily from the soils on the prairie uplands but, in some places, it is mixed with sandy material washed from other parts of the Coastal Plain.

This alluvial land varies from place to place in color, texture, structure, and reaction. In color, it ranges from dark grayish brown to almost black. In many places, the profile is mottled, especially in the lower part. The texture is loam, silty clay, or clay with some sandy material intermixed. In many areas the profile has alternating layers of loam, silty clay, and clay. The reaction is mildly alkaline to slightly acid.

This land is likely to be flooded frequently. It has slow drainage and remains wet until late in spring. The total acreage is small and is widely distributed in the prairie section of the county.

Use and management.—About eight-tenths of this land has been cleared and is used mainly for pasture and hay. Corn and sorghum are the main row crops. The land is in vegetation most of the time, and the floods are not likely to cause much damage. If this soil is adequately fertilized and otherwise well managed, yields of suitable pasture grasses and clover are moderate to good. Capability unit A6 IIIw–1.

Mixed local alluvial land

Mixed local alluvial land (Mc).—This land type consists of alluvium that has been deposited at the head of small drainageways and in depressions in the prairie section. The alluvium sloughed or was washed from the surrounding upland soils. It is primarily acid material but contains some material from the Houston, Sumter, and other alkaline soils. This land ranges from clay loam to clay in texture and from grayish brown to dark brown in color. It is neutral to strongly acid and somewhat poorly drained to poorly drained.

Mixed local alluvial land is not so susceptible to flooding as Mixed alluvial land, but it does receive some runoff and seepage waters from the surrounding areas. It is wet until late in spring and is moderately fertile. It has a small total acreage but is widely distributed throughout the prairie section.

Use and management.—About three-fourths of this land has been cleared and is used primarily for pasture and hay. If it is managed well, it has good yields of summer pasture. If this land is artificially drained, moderate yields of corn and sorghum can be grown. Capability unit A6–IIIw–1.

Ochlockonee series

This series consists of deep, well-drained, medium acid to strongly acid soils. These soils formed on stream flood plains from material that was washed primarily from the coarser textured soils on the Coastal Plain. They have a dark grayish-brown silt loam surface soil and a dark-brown silt loam to silty clay loam subsoil. The native vegetation was gum, maple, pine, and ash, and some oak and hickory.

The Ochlockonee soils occur with the Iuka and Mantachie soils and, to some extent, with Sandy alluvial land, somewhat poorly drained. They are the best drained member of the Ochlockonee-Iuka-Mantachie catena and are not so intensely mottled as the Iuka and Mantachie soils. They are more uniform in color and texture than Sandy alluvial land, somewhat poorly drained, and are better drained.

Only one Ochlockonee soil is mapped in Montgomery County. This soil has a very small total acreage in this county, but it is fairly widely distributed. Most of it has been cleared and is used for row crops, hay, and pasture.

Ochlockonee silt loam (0 to 2 percent slopes) (Oc).—The following describes a profie of this soil in a moist pasture area:

A_{1p} 0 to 12 inches, dark grayish-brown (10YR 4/2) silt loam; very weak, medium, granular structure; very friable when moist; medium acid to strongly acid; gradual, smooth boundary.

A_{12} 12 to 34 inches, dark-brown (7.5YR 4/4) silt loam; very weak, medium, granular structure; friable when moist and slightly hard when dry; strongly acid; gradual, smooth boundary.

C 34 to 60 inches, brown (7.5YR 5/4) silt loam to sandy loam with a few, medium mottles of gray (10YR 5/1) and yellowish brown (10YR 5/8); very weak structure that is almost massive (structureless); very friable; strongly acid.

The entire profile varies from place to place in texture. It may consist of thin stratified layers of silt, silty clay, fine sandy loam, and sandy clay loam. The surface soil ranges from grayish brown to very dark grayish brown and the subsoil ranges from dark brown to yellowish brown. Along the Alabama and Tallapoosa Rivers, some areas contain a small amount of mica flakes. Included with this soil are small areas that have a sandy loam or fine sandy loam surface soil.

This soil is highly permeable and has a moderately high capacity for holding available moisture. It contains a large amount of organic matter and is one of the most fertile soils in the county. The natural fertility is raised from time to time by sediments that are deposited by floodwaters. The tilth is very good.

Use and management.—Because this soil is likely to be flooded at times, its use is somewhat limited. Cotton and similar crops have such rank growth that harvesting is difficult. But this soil is well suited to corn, grain sorghum, summer hay, and pasture grasses. Capability unit A3–IIw–2.

Oktibbeha series

In this series are moderately deep to deep, moderately well drained, strongly acid soils that are nearly level to strongly sloping. These soils developed on thin beds of acid clay over marl or chalk. The beds of clay are normally less than 4 feet thick. More than 85 percent of the acreage in Oktibbeha soils consists of clays, and the rest consists of fine sandy loams. The clays have a reddish-brown plow layer and a red, mottled subsoil. The fine sandy loams have a grayish-brown plow layer and clay subsoil that is red or yellowish red in the upper part and intensely mottled in the lower part. The native vegetation is shortleaf pine, hickory, oak, blackgum, and sweetgum.

The Oktibbeha soils occur mainly with the Vaiden and Eutaw soils. In many places they occur with the Sumter soils. They are better drained than the Vaiden and Eutaw soils and differ from these associated soils in color. Oktibbeha soils are characteristically reddish, whereas Vaiden soils are yellowish brown and Eutaw soils are mottled gray. They are somewhat more rolling than Vaiden or Eutaw soils and have a shallower depth to the calcareous substratum.

In some areas the Oktibbeha soils occur in small patches surrounded by Sumter soils. In these areas the Oktibbeha soils are generally shallower than they are elsewhere. In areas where the Oktibbeha soils occur with the Vaiden and Sumter soils, they are mapped together with the Vaiden and Sumter soils as the Sumter-Oktibbeha-Vaiden complex.

***Figure 13.*—Oktibbeha clay, eroded nearly level phase, over Selma chalk. The clay is strongly acid, but the underlying material is alkaline.**

Oktibbeha soils are among the most extensive soils in the county. They are fairly well distributed throughout the prairie section and are locally called red prairies. About two-thirds of the acreage is cleared and used for pasture and hay. Much of this acreage was formerly used for row crops.

Oktibbeha clay, eroded nearly level phase (1 to 3 percent slopes) (ObB2).—Figure 13 shows a profile of Oktibbeha clay, eroded nearly level phase. The following describes a profile of this soil in a moist pasture:

A_p 0 to 4 inches, reddish-brown (5YR 4/3) clay; moderate, medium, granular structure; firm when moist, hard when dry, and very plastic when wet; strongly acid; clear, smooth boundary.

B_{21} 4 to 15 inches, red (2.5YR 4/8) clay, with a few, fine, distinct mottles of light yellowish brown (2.5Y 6/4); moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, smooth boundary.

B_{22} 15 to 25 inches, red (2.5YR 4/8) clay with common, medium, distinct mottles of yellowish red (5YR 4/8) and light yellowish brown (2.5Y 6/4); moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.

B_3 25 to 34 inches, mottled pale-olive (5Y 6/3) and light yellowish-brown (2.5Y 6/4) clay with a few, medium, distinct mottles of yellowish red (5YR 4/8); moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.

C 34 to 45 inches, mottled pale-olive (5Y 6/4) and light yellowish-brown (2.5Y 6/4) clay; weak, medium, angular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; abrupt, smooth boundary.

D_{ca} 45 to 65 inches, light-gray (2.5Y 7/0) clay streaked with light yellowish brown (2.5Y 6/4); massive (structureless); friable when moist, hard when dry, and very plastic when wet; mildly alkaline; some white, hard nodules of lime as much as half an inch across.

The surface soil ranges from reddish brown to very dark brown. The depth to the calcareous substratum ranges from 24 to 48 inches. The part of the B horizon

that is comparatively free of mottles ranges from about 4 to 20 inches in thickness.

Included with this soil is a small acreage that is severely eroded and a small acreage that has a clay loam surface soil. Also included are some areas that have small remnants of sandy material in the surface soil.

Oktibbeha clay, eroded nearly level phase, has slow infiltration and slow permeability. Its capacity for holding available moisture is moderately high to high. The fertility is moderately low, but response to fertilizer is good. Tilth is not favorable for the growth of row crops, because this soil tends to become blocky.

Use and management.—This soil has a large total acreage. It is used primarily for pasture and hay. Some small grain is also grown. Pine trees do not grow well in the shallower areas of this soil, but they grow fairly well in the deeper areas. Capability unit A6–IIe–2.

Oktibbeha clay, eroded very gently sloping phase (3 to 5 percent slopes) (ObC2).—In most places this soil is less red and more mottled in the subsoil than Oktibbeha clay, eroded nearly level phase, and it is shallower to the underlying calcareous material. It has more rapid runoff than the eroded nearly level phase and less fertility. This soil is suitable for about the same uses as the eroded nearly level phase. Small grain is often planted on the more sloping areas of this soil because they are better drained in winter and spring than the more nearly level areas. Capability unit A6–IIIe–2.

Oktibbeha clay, severely eroded very gently sloping phase (3 to 5 percent slopes) (ObC3).—This soil has a red to reddish-brown surface soil. Most other profile characteristics are similar to those of Oktibbeha clay, eroded nearly level phase, except that more of the original surface soil has been washed away. In a few places a few shallow to deep gullies have formed and the underlying chalk, or marl, is exposed.

This soil has low fertility and a low content of organic matter. The infiltration is less than that in the eroded nearly level phase. Although the suitable uses for this soil are about the same as for the eroded nearly level phase, yields are somewhat less. Capability unit A6–IVe–2.

Oktibbeha clay, eroded gently sloping phase (5 to 8 percent slopes) (ObD2).—This soil varies more in thickness than the more nearly level Oktibbeha clays and is generally shallower to the underying marl, or chalk. The calcareous material is exposed in many areas. The red subsoil is thinner than that in the more nearly level clays and, in many places, is more mottled than the subsoil in the more nearly level areas. Because runoff is more rapid than it is on the more nearly level clays, this soil needs more exacting management to prevent further erosion. Capability unit A6–IVe–2.

Oktibbeha clay, severely eroded gently sloping phase (5 to 8 percent slopes) (ObD3).—This soil varies in thickness and, in many places, the underlying chalk, or marl, is exposed. In most places, the subsoil is less red than that of Oktibbeha clay, eroded nearly level phase. The fertility and content of organic matter are low. Runoff is rapid.

This is the most extensive Oktibbeha soil. It needs intensive management, especially the use of protective vegetative cover, to control erosion. Capability unit A6–VIe–2.

Oktibbeha clay, severely eroded, 8 to 20 percent slopes (ObE3).—This soil has many variations and many small inclusions. Its slope range is wide. Some included areas are moderately eroded, and much of this soil has occasional shallow to deep gullies. The depth to the underlying marl, or chalk, ranges from a few inches to about 4 feet. Because runoff is very rapid, exacting management is needed to prevent further erosion. Where this soil is used for pasture, grazing should be controlled so that a good cover is maintained. Capability unit A6–VIe–2.

Oktibbeha fine sandy loam, eroded nearly level phase (1 to 3 percent slopes) (OcB2).—This soil is generally thicker above the calcareous material than the Oktibbeha clays. The following describes a profile of this soil in a moist pasture:

A_p 0 to 3 inches, grayish-brown (10YR 5/2) fine sandy loam; weak, fine, crumb structure; very friable; medium acid to strongly acid; clear, smooth boundary.

A_{3p} 3 to 7 inches, yellowish-red (5YR 5/6) fine sandy clay loam; very weak, medium, subangular blocky structure; friable when moist and slightly plastic when wet; strongly acid; clear, smooth boundary.

B_2 7 to 25 inches, yellowish-red (5YR 4/8) to red (2.5YR 4/8) clay with a few medium and distinct mottles of light yellowish brown (10YR 6/4); moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.

B_3 25 to 38 inches, intensely mottled yellowish-red (5YR 5/6), light yellowish-brown (10YR 6/4) and olive-gray (5Y 5/2) clay; moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.

C 38 to 52 inches, intensely mottled pale-olive (5Y 6/4) light yellowish-brown (2.5Y 6/4), and gray (5Y 6/1) clay; weak, coarse, subangular blocky to nearly massive (structureless); firm to friable when moist, hard when dry, and very plastic when wet; strongly alkaline; abrupt, smooth boundary.

D_{ca} 52 to 60 inches, light olive-gray (5Y 6/2) clay streaked with olive brown (2.5Y 4/4); massive (structureless); friable when moist, hard when dry, and very plastic when wet; mildly alkaline.

The fine sandy loam is a minor type and comprises only about 15 percent of the total acreage of Oktibbeha soils.

The surface soil ranges from grayish brown to brown. Included with this soil are many areas having a sandy surface soil that is not related to the horizons below.

This soil has slightly higher infiltration than the Oktibbeha clays, at least during short rains. It has about the same permeability in the subsoil as the clays. The capacity for holding available moisture is high. Although fertility is low, the response to fertilizer is good. This soil has slightly better tilth than the Oktibbeha clays.

Use and management.—More than three-fourths of this soil is used for pasture, hay, and small grain. A small part is in row crops. Only areas that are deepest to the underlying calcareous substratum should be used for pine trees. Capability unit A6–IIe–2.

Oktibbeha fine sandy loam, eroded very gently sloping phase (3 to 5 percent slopes) (OcC2).—This soil is similar to Oktibbeha fine sandy loam, eroded nearly level phase, in most profile characteristics and in its suitability for use. It has, however, more rapid runoff than the eroded nearly level phase and a thinner solum. A

slightly smaller acreage of this soil is in row crops. Capability unit A6–IIIe–2.

Oktibbeha fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (OcD2).—This soil varies more from place to place than Oktibbeha fine sandy loam, eroded nearly level phase. In most places it has a lighter colored surface soil than the eroded nearly level phase and a subsoil that is more intensely mottled and lighter red. In many places it is shallower to the underlying marl, or chalk.

This soil is suited to about the same uses as the eroded nearly level phase, but it needs more exacting management to prevent further erosion. Capability unit A6–IVe–2.

Oktibbeha fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (OcE2).—This soil is underlain by chalk, or marl, at various depths, and its solum varies from place to place in thickness. Its subsoil is less red than that of Oktibbeha fine sandy loam, eroded nearly level phase. Most areas have a few shallow to deep gullies. Some of the deep gullies extend into the calcareous material. Runoff is rapid. This soil needs intensive erosion control for its protection. Capability unit A6–VIe–2.

Pheba series

This series consists of shallow, somewhat poorly drained, strongly acid soils that are nearly level. These soils are on beds of unconsolidated sand and sandy clay in the uplands. In most places the Pheba soils have a fragipan at depths of 18 to 20 inches. They have a light brownish-gray to dark-gray very fine sandy loam surface soil and a light yellowish-brown to grayish-brown light sandy clay loam subsoil. The native vegetation is longleaf, loblolly, and shortleaf pines and some mixed hardwoods. The understory is gallberry.

In Montgomery County the Pheba soils occur primarily with the Bowie, Lakeland, and Rains soils, which do not have a fragipan. They are more poorly drained and more intensely mottled in the subsoil than the Bowie soils and are somewhat coarser textured. They are less sandy and more poorly drained than the Lakeland soils. Pheba soils are better drained than the Rains soils and are more yellow in the subsoil.

Only one Pheba soil is mapped in Montgomery County. This soil does not have a large total acreage. It is mostly in the southern part of the county; the largest areas are near Lenora. About three-fourths of this soil has been cleared, but little is now used for row crops. Most of this is used for pasture or pine trees.

Pheba very fine sandy loam (0 to 3 percent slopes) (Pa). The following describes a profile of this soil in a moist cultivated field:

- A_p 0 to 6 inches, dark-gray (2.5Y 4/0) very fine sandy loam; very weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; abrupt, smooth boundary.
- A_3 6 to 10 inches, very dark grayish-brown (10YR 3/2) very fine sandy loam splotched very dark brown (10YR 2/2) and gray (10YR 6/1) by organic matter; weak, medium, crumb structure; very friable; strongly acid; clear, wavy boundary.
- B_2 10 to 18 inches, light olive-brown (2.5Y 5/4) heavy fine sandy loam to fine sandy clay loam with few, medium, distinct mottles of pale olive (5Y 6/4); very weak, fine, subangular blocky structure; very friable; strongly acid; clear, wavy boundary.
- B_{3m} 18 to 28 inches, light yellowish-brown (2.5Y 6/4) light sandy clay loam with common, medium, faint to distinct mottles of gray (2.5Y 6/0) and brownish yellow (10YR 6/8); weak, medium, subangular blocky structure; firm when moist, nonplastic when wet, and hard when dry; strongly acid; clear, wavy boundary.
- C 28 to 48 inches, brownish-yellow (10YR 6/8) sandy clay loam with many, coarse, distinct mottles of gray (2.5Y 6/0) and strong brown (7.5YR 5/8) and few, fine, distinct mottles of reddish yellow (5YR 6/6); weak, massive structure; firm when moist, hard when dry, and plastic when wet; strongly acid; this layer is stratified with lenses of sandy loam, sandy clay loam, and sandy clay.

The surface soil ranges from 5 to 10 inches in thickness and from gray to very dark grayish brown in color. The texture of the B horizon ranges from fine sandy loam to sandy clay.

The permeability in the A and B horizons is moderately rapid, but permeability in the fragipan is slow. This soil, therefore, is wet in winter and early in spring, but it has a low capacity for holding water that plants can use. The natural fertility and content of organic matter are low. Most of the time, the tilth of this soil is good.

Use and management.—Because it is wet in winter and early in spring, and because the fragipan restricts the growth of roots, this soil is not suited to many of the crops generally grown in the county. But yields of suitable crops are good if adequate amounts of fertilizer and organic matter are added. Capability unit A3–IIIw–2.

Prentiss series

In this series are moderately deep, moderately well drained, strongly acid soils on stream terraces. These soils formed from sediments that were washed from the Ruston, Norfolk, Shubuta, and other soils. They have a grayish brown very fine sandy loam to loamy fine sand surface soil. The subsoil is yellowish-brown fine sandy clay loam. At depths of 24 to 30 inches there is a fragipan. The native vegetation is predominantly loblolly and shortleaf pines but includes some oak and gum.

The Prentiss soils, in this county, occur primarily with the Izagora, Stough, and Myatt soils. In the surface soil and the upper subsoil, the Prentiss soils are similar to the Izagora soils. The Izagora soils, however, have a plastic sandy clay substratum and no fragipan. The Prentiss soils are better drained than the Stough and Myatt soils and are yellower in the upper part of the subsoil.

These soils have a small total acreage in Montgomery County. Most of it is in the Pinedale community. Almost three-fourths of the acreage is used for row crops, and the rest is in trees, pasture, and idle land.

Prentiss very fine sandy loam, level phase (0 to 2 percent slopes) (PbA).—The following describes a profile of this soil in a cultivated field:

- A_p 0 to 6 inches, grayish-brown (2.5Y 5/2) very fine sandy loam; weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; wavy boundary.
- A_2 6 to 13 inches, light-gray (2.5Y 7/2) very fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, wavy boundary.
- B_2 13 to 28 inches, yellowish-brown (10YR 5/8) fine sandy clay loam; weak, medium, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

B_{3m} 28 to 34 inches, yellowish-brown (10YR 5/8) fine sandy clay loam fragipan faintly mottled with strong brown (7.5YR 5/8); massive (structureless); friable to firm when moist and hard when dry; somewhat cemented; very strongly acid; gradual, smooth boundary.

C 34 to 50 inches, intensely mottled red (10R 4/8), gray (10YR 6/1), and light olive-brown (2.5Y 5/4) heavy fine sandy clay loam; massive (structureless); slightly sticky when wet and hard when dry; very strongly acid.

The surface soil ranges from grayish brown to gray in color and from very fine sandy loam to loamy fine sand in texture. Areas that are not cultivated for long periods have a considerable amount of leached sand in the surface soil. The B horizon ranges from yellowish brown to light olive brown. The depth to the fragipan is 24 to 30 inches.

In the surface soil and upper subsoil, this soil is permeable to roots, moisture, and air and has a moderately high capacity for holding available moisture. The permeability in the lower subsoil, however, is restricted by the fragipan. This soil warms slowly in spring.

Use and management.—The range in crop suitability of this soil is moderate. Pasture is one of the better uses. If cotton is planted early, good stands are difficult to obtain. Under normal weather and good management, this soil produces moderate yields of suitable crops. Capability unit A3-IIe-3.

Prentiss very fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (PbB2).—This soil has essentially the same profile characteristics as Prentiss very fine sandy loam, level phase, Because it is more strongly sloping than the level phase, it has greater runoff. Included with this soil are a few small areas that have slopes of 5 to 8 percent.

Because runoff is more rapid, this soil can be tilled sooner after wet periods than the level phase. Yields, however, are somewhat lower on this soil than on the level phase, although the two soils are suited to about the same kinds of crops. Capability unit A3–IIe–3.

Rains series

This series consists of deep, poorly drained, strongly acid soils that are nearly level. These soils are on thick beds of sandy loam and sandy clay loam. They have a very dark gray fine sandy loam to loamy sand surface soil and a gray, mottled, sandy loam to sandy clay subsoil. The native vegetation is gum, maple, water oak, live oak, and pine and an understory of gallberry and some palmetto.

The Rains soils occur at the head of small drainageways and at the base of slopes. At the base of slopes, they adjoin Bowie, Lakeland, Sawyer, and other soils, which are better drained than the Rains soils. The Rains soils receive seepage from these adjoining soils and remain wet most of the time.

Only one Rains soil is mapped in Montgomery County. It has a moderately large acreage, which is widely distributed. More than one-half of this soil is in trees, and most of the rest is in pasture. A small acreage is in crops.

Rains fine sandy loam (0 to 4 percent slopes) (Ra).—The following describes a profile of this soil in a moist pasture:

A_2 0 to 3 inches, very dark gray (7.5YR 3/0) fine sandy loam; weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; clear, smooth boundary.

A_2 3 to 10 inches, grayish-brown (10YR 5/2) fine sandy loam with a few, faint mottles of pale brown (10YR 6/3); a few organic stains; weak, medium, crumb structure; very friable; strongly acid; gradual, smooth boundary.

B_2 10 to 26 inches, gray (10YR 6/1) sandy clay loam with common, coarse mottles of light yellowish brown (2.5Y 6/4) and light gray (10YR 7/1); very weak, medium, subangular blocky structure; friable when moist and slightly sticky when wet; strongly acid; gradual, smooth boundary.

C 26 to 44 inches, gray (10YR 6/1) sandy clay loam to sandy clay with common, coarse, faint to distinct mottles of light olive brown (2.5Y 5/6) and pale yellow (2.5Y 7/4); massive (structureless); friable to firm when moist and plastic when wet; strongly acid.

The surface soil ranges from gray to very dark gray in color and from loamy fine sand to fine sandy loam in texture. The texture of the subsoil is sandy loam to sandy clay. The mottling varies from a very small to a moderate amount. Included with this soil are a few small areas that have a loamy sand surface soil that is as much as 30 inches thick.

This soil is moderately low in natural fertility. In undisturbed areas the upper few inches of the surface soil contains a considerable amount of organic matter. Although the upper 20 to 30 inches of this soil is moderately permeable, areas of this soil remain wet throughout most of the year because of the constant seepage from surrounding areas.

Use and management.—This soil has a narrow range of suitable uses because it is wet most of the time. It produces fair yields of summer grasses, but, if areas in these grasses are not well managed, they revert to carpetgrass. A few small areas that do not constantly receive seepage produce good yields of sugarcane and sorghum. Capability unit A3–IVw–1.

Roanoke series

This series consists of deep, poorly drained, strongly acid soils that are nearly level. These soils are on stream terraces—on the flat parts and along sloughs and slight depressions. They formed mainly from sediments washed from the soils on the Piedmont. In some places these sediments contain an admixture washed from soils on the Coastal Plain. Roanoke soils have a gray silt loam surface soil and a gray, mottled, silty clay loam to silty clay subsoil. The native vegetation is maple, elm, hickory, water, white, and willow oaks, and some pine.

These soils occur with the Wickham, Altavista, and Augusta soils, all of which are better drained than the Roanoke soils.

Only one Roanoke soil is mapped in Montgomery County. This soil is moderately extensive and occurs mostly along the Alabama and Tallapoosa Rivers in the northern part of the county. About one-fifth of the acreage has been cleared and is used mostly for pasture.

Roanoke silt loam (0 to 3 percent slopes) (Rb).—Throughout the profile of this soil there is a very small amount of very fine sand and some mica. The following describes a profile in a moist pasture:

A_1 0 to 10 inches, gray (10YR 5/1) silt loam streaked with dark-brown (7.5YR 4/4) organic stains; weak, medium, granular structure; friable; strongly acid; gradual, smooth boundary.

B_{1g} 10 to 25 inches, gray (2.5Y 5/0) silty clay loam with common, fine to medium, distinct mottles of yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/4); moderate, medium, granular structure; friable when moist, slightly hard when dry, and slightly plastic when wet; strongly acid; gradual, smooth boundary.

B_{2g} 25 to 40 inches, gray (2.5Y 5/0) silty clay loam to silty clay with common, coarse, distinct mottles of strong brown (7.5YR 5/8); massive (structureless); firm when moist, hard when dry, and plastic when wet; strongly acid; gradual, smooth boundary.

C_g 40 to 50 inches, intensely mottled gray (2.5Y 5/0), yellowish-brown (10YR 5/8), and strong-brown (7.5YR 5/8) silty clay to clay; massive (structureless); firm when moist, very hard when dry, and plastic when wet; strongly acid.

In undisturbed wooded areas the upper 2 or 3 inches of this soil is very dark grayish brown. The degree of mottling is slight to intense. Included with this soil are a few small areas that have a very fine sandy loam surface soil.

This soil is moderate in fertility and contains a moderate amount of organic matter. The permeability is moderate to moderately slow. Runoff is very slow in the more nearly level and slightly depressed areas. The capacity for holding available moisture is moderately high. In winter and spring the water table is high.

Use and management.—If open ditches are used to drain off the surface water and, in some areas, to improve internal drainage, this soil will be greatly improved for growing summer pasture. Capability unit A3–IVw–1.

Ruston series

In this series are deep, well-drained, strongly acid soils that are very gently sloping to sloping. These soils are on thick beds of sand and sandy clay. They have a grayish-brown loamy sand to fine sandy loam surface soil and a yellowish-red to strong-brown subsoil. The native vegetation is primarily loblolly and shortleaf pines and mixed hardwoods.

The Ruston soils occur with the Shubuta, Bowie, and Lakeland soils. Their subsoil is more friable and sandier than that of the Shubuta soils and finer textured than that of the Lakeland soils. Ruston soils lack a compact, mottled substratum like that of the Bowie soils.

These soils have a small total acreage, which occurs primarily in small areas in the southern third of the county. The largest areas are south of Ramer and east of Pine Level. Almost two-thirds of the acreage is in row crops. The rest is in trees, pasture, and idle land.

Ruston fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (RcB2).—The following describes a profile of this soil in a cultivated field:

A_p 0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, crumb structure; very friable when moist and loose when dry; strongly acid; clear, wavy boundary.

A_2 5 to 11 inches, pale-brown (10YR 6/3) fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; gradual, wavy boundary.

B_1 11 to 15 inches, light yellowish-brown (10YR 6/4) heavy sandy loam; very weak, medium, subangular blocky structure; very friable; strongly acid; gradual, wavy boundary.

B_2 15 to 30 inches, strong-brown (7.5YR 5/6) sandy clay loam; weak, medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

B_3 30 to 35 inches, reddish-yellow (7.5YR 6/8) sandy clay loam; weak, medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary.

C 35 to 40 inches +, strong brown (7.5YR 5/6) loamy sand; very weak, fine, crumb structure to single grain (structureless); loose; very strongly acid.

The surface soil ranges from light gray to dark brown in color and from fine sandy loam to loamy sand in texture. It is 8 to 16 inches thick. The B horizon ranges from strong brown to yellowish red in color and from light sandy clay loam to sandy clay loam in texture. The solum is 30 inches to more than 60 inches thick. Included with this soil are small areas that are level.

This soil is permeable to roots, air, and moisture. It has a moderately high capacity for holding available moisture. It responds very well to additions of fertilizer and organic matter.

Use and management.—This soil has a comparatively wide range of crop suitability. It is suited to moderately intensive use and produces moderate to high yields under good management. Capability unit A3–IIe–1.

Ruston fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (RcC2).—This soil has lost more of its original surface soil through erosion than has Ruston fine sandy loam, eroded very gently sloping phase, but, in other respects, it is similar to that soil in profile characteristics. It has, however, somewhat more rapid runoff and somewhat lower fertility.

This soil is suited to about the same kinds of crops as the eroded very gently sloping phase. It needs, however, more exacting management to control erosion. It ought to have a complete system of water control that provides terraces and vegetated waterways. In addition, a cropping system ought to be used that keeps the soil in protective crops at least 2 in every 4 years. Capability unit A3–IIIe–1.

Ruston fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (RcD2).—This soil varies more than Ruston fine sandy loam, eroded very gently sloping phase, in thickness of the surface soil. Near the middle or top of the slope most of the surface soil has been lost, but near the base of the slope 6 to 8 inches of fine sandy loam surface soil remains in place. In some places the surface soil is yellowish brown to strong brown. In most places this soil has a thinner solum than the eroded very gently sloping phase and is less red in the subsoil. A few shallow gullies have formed and, in cultivated areas, rills are numerous.

This soil ought to be cultivated only occasionally. It is more difficult to conserve than the other Ruston soils. Among the best uses for this soil are permanent hay and pasture. If this soil is urgently needed for row crops, they should be planted in a cropping system that keeps the soil in sod crops 3 years in every 4. Unless it is managed at a high level, this soil should be planted to pine trees. Capability unit A3–IVe–1.

Sandy alluvial land

Sandy alluvial land, somewhat poorly drained (Sa).—This land type consists of alluvium deposited on the first bottoms. It is generally in narrow strips along the smaller streams. The alluvium has been washed from sandy upland soils, and, in most places, the texture of this land type is sandy. The texture, however, ranges

from sand to clay. In many places, the profile consists of alternating layers of sand, sandy loam, and sandy clay loam. Some layers may be free of mottles, but others may be intensely mottled. The native vegetation is sweetgum, willow, bay, water oak, and some pine.

This land type is likely to be flooded frequently. In winter and spring, some areas receive seepage water from the surrounding hills. The natural fertility and content of organic matter are moderately high. This land type has a large total acreage. Except in the prairie section, it is widely distributed throughout the county.

Use and management.—About one-third of this land type has been cleared and is mostly in pasture, but some of the better drained areas are planted to corn, sugarcane, and sorghum. If this soil is adequately drained and otherwise well managed, it will produce good yields of suitable crops. Capability unit A3–IVw–1.

Sawyer series

This series consists of moderately deep, moderately well drained, strongly acid soils that are very gently sloping to sloping. These soils have developed from thick beds of acid clay and sandy clay. They have a grayish-brown fine sandy loam surface soil and a light olive-brown or yellowish-brown sandy clay loam subsoil. The subsoil is underlain by heavy clay. The native vegetation consists of oak, blackgum, sweetgum, hickory, loblolly pine, shortleaf pine, and some gallberry.

The Sawyer soils occur mainly with the Bowie, Cuthbert, Boswell, and Susquehanna soils and, to some extent, with the Wilcox soils. They are finer textured than the Bowie soils and are more plastic in the lower part of the profile. They are more friable than the Boswell soils, which have a subsoil that is red rather than light olive brown or yellowish brown. They are more friable than the Cuthbert or Susquehanna soils and have better developed horizons.

These soils are moderately extensive. Most of the acreage is in the south-central part of the county. The largest areas are in the vicinity of Pine Level. About three-fourths of the acreage has been cleared and is about equally used as cropland and pasture.

Sawyer fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (SbB).—The following describes a profile of this soil in a moist cultivated area:

A_{1p} 0 to 8 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak, medium, crumb structure; very friable; medium acid; clear, smooth boundary.

B_{21} 8 to 16 inches, light olive-brown (2.5Y 5/6) fine sandy clay loam; weak, medium, subangular blocky structure; very friable; strongly acid; clear, smooth boundary.

B_{22} 16 to 24 inches, light olive-brown (2.5Y 5/6) fine sandy clay loam with yellowish-red (5YR 4/8), strong-brown (7.5YR 5/8), and gray (10YR 6/1) mottles; mottles are common, medium, and distinct; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, and slightly hard when dry; strongly acid; gradual, smooth boundary.

B_3 24 to 34 inches, intensely mottled light olive-brown (2.5Y 5/6), yellowish-red (5YR 4/8), strong-brown (7.5Y 5/8), yellowish-brown (10YR 5/8), and gray (10YR 6/1) fine sandy clay; weak, medium, subangular blocky structure; firm when moist, plastic when wet, and very hard when dry; very strongly acid; gradual, smooth boundary.

C 34 to 48 inches mottled light olive-brown (2.5Y 5/6), gray (2.5Y 6/0), and yellowish-brown (10YR 5/8) fine sandy clay that has a few red (2.5YR 4/8) mottles; massive (structureless); firm when moist, plastic when wet, and very hard when dry; very strongly acid.

The surface soil ranges from light brownish gray to dark grayish brown in color and from 5 to 12 inches in thickness. The upper B horizon is light olive brown to yellowish brown. The depth of the sandy clay or clay substratum ranges from 20 to 28 inches. In some places the substratum is stratified. Included with this soil is a small acreage that is level.

This soil has a moderately high infiltration and permeability through the B_2 horizon, but below the B_2 horizon permeability is slow. The capacity for holding available moisture is moderately high. This soil is low in natural fertility but responds well to mineral fertilizer and organic matter. Tilth is good.

Use and management. This soil has a fairly wide range in use suitability. It is fairly well suited to most crops generally grown in the county. It produces moderate to good yields under good management. Capability unit A3–IIe–3.

Sawyer fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (SbB2).—This soil has a thinner surface soil than Sawyer fine sandy loam, very gently sloping phase. The surface soil in most places is light brownish gray. In other respects this soil has the same soil characteristics as the very gently sloping phase. Included with this soil are a few acres that are severely eroded and a few areas that have occasional shallow gullies.

This soil makes up about two-fifths of the total acreage in Sawyer soils. It is suited to practically the same uses as the very gently sloping phase but needs more intensive conservation to maintain productivity and to control erosion. Capability unit A3–IIIe–3.

Sawyer fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (SbC2).—This soil has a thinner solum and more rapid runoff than Sawyer fine sandy loam, very gently sloping phase. Included with this soil is a very small acreage that is only slightly eroded.

Intensive conservation is needed to control erosion and to maintain productivity. Sod crops should be used on the soil most of the time. Capability unit A3–IVe–2.

Sawyer fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (SbD2).—This soil varies more in thickness of the surface soil than Sawyer fine sandy loam, very gently sloping phase. The surface soil varies from 2 or 3 inches in the eroded areas to as much as 12 inches in other areas. The color of the surface soil, because of leaching, is lighter than that of the very gently sloping phase. Runoff is rapid.

This soil is not suited to row crops. Under management that includes additions of fertilizer, it will produce moderate yields of suitable pasture plants. Pine trees grow well on this soil. Capability unit A3–VIe–1.

Sawyer sandy clay loam, severely eroded gently sloping phase (5 to 8 percent slopes) (ScC3).—This soil has had most of its original surface soil removed by erosion. It is finer textured than the Sawyer soils that are less severely eroded. The surface soil has a yellowish color rather than the brownish color of the Sawyer fine sandy loams. Runoff is rapid and infiltration is slow. The natural fertility is low, and tilth is less favorable than on the Sawyer fine sandy loams.

This soil is not suited to row crops. It is better suited to pasture and to pine trees. Capability unit A3–VIe–1.

Sawyer sandy clay loam, severely eroded sloping phase (8 to 12 percent slopes) (ScD3).—This is the most severely eroded Sawyer soil. It has lost most of the original sandy surface soil and, in many areas, is badly gullied. Runoff is very rapid, and further erosion is a serious hazard.

Because of the steep slopes, erosion, and fine texture, this soil is not suited to row crops. It has a very limited use for pasture or hay crops and is best suited to pine trees. Capability unit A3–VIIe–1.

Shubuta series

In this series are moderately deep to deep, moderately well drained to well drained, strongly acid soils that are very gently sloping to sloping. These soils are on stratified beds of acid clay, sandy clay, sand, and, in places, clay shale. They have a surface soil of gray to grayish-brown fine sandy loam or brown sandy clay loam. Their subsoil is yellowish-red to red sandy clay. In many areas in the southwestern part of the county, lime, or marl, occurs at depths of 5 to 8 feet, and, in a few places, calcareous material crops out in small areas. This is particularly true on the steeper slopes. The native vegetation is chiefly loblolly pine and shortleaf pine but some mixed hardwoods are included.

The Shubuta soils occur with the Cuthbert, Boswell, Bowie, and Lakeland soils. They are more uniform in color and texture and have a thicker subsoil than the Boswell soils and are underlain by more friable and coarser textured material. They are less friable than the Bowie soils, which have a yellowish-brown instead of a yellowish-red subsoil.

These soils are not extensive in Montgomery County, but they are widely distributed throughout the southern part. Almost three-fourths of the acreage has been cleared, but much of this is reverting to pine forest. The rest is used for row crops and pasture.

Shubuta very fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (SeB2).—The following describes a profile of this soil:

- A_p 0 to 4 inches, grayish-brown (2.5Y 5/2) very fine sandy loam; very weak, fine, crumb structure; very friable when moist and almost loose when dry; strongly acid; clear, wavy boundary.
- A_3 4 to 8 inches, brown (10YR 5/3) very fine sandy loam; weak, medium, crumb structure; very friable; strongly acid; clear, smooth boundary.
- B_1 8 to 12 inches, yellowish-red (5YR 4/8) fine sandy clay loam; very weak, fine, subangular blocky structure; friable; strongly acid; clear, wavy boundary.
- B_2 12 to 26 inches, yellowish-red (5YR 4/8) to red (2.5YR 4/6) fine sandy clay; weak, medium, subangular blocky structure; friable to firm when moist, hard when dry, and slightly sticky when wet; strongly acid; gradual, wavy boundary.
- B_3 26 to 36 inches, red (2.5YR 4/6) fine sandy clay becoming slightly coarser textured in lower part of this horizon; common, medium mottles of yellowish brown (10YR 5/4), gray (10YR 6/1), and brown (7.5YR 5/4); weak to moderate, medium, subangular blocky structure; friable when moist, hard when dry, and slightly sticky when wet; strongly acid.
- C 36 to 48 inches, mottled gray (2.5Y 5/0), light olive-brown (2.5Y 5/6), red (2.5YR 4/6), and light yellowish-brown (2.5Y 6/4) sandy clay loam; mottles are coarse and distinct; very weak, coarse, subangular blocky structure; friable when moist and slightly hard when dry; strongly acid; in some places this horizon is stratified lenses of sand and clay or silty clay.

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The A horizon ranges from 6 to 18 inches in thickness but is generally 6 to 12 inches thick. It is gray to dark grayish brown. The B horizon is yellowish red or red. The B_2 horizon occasionally is silty clay or clay. The solum ranges from 24 to 40 inches in thickness but is generally 30 to 36 inches thick. In some areas iron crusts are on the surface. Included with this soil are areas that have a fine sandy loam to loamy fine sand surface soil. Also included are some uneroded areas.

In uneroded areas infiltration is moderate. This soil is moderately permeable in the B horizon. It has a moderately high capacity for holding available moisture. The natural fertility and content of organic matter are low, but response to fertilizer is good.

Use and management.—This soil is suited to most crops commonly grown in the county. It produces moderate yields of most of these crops. The uneroded, more nearly level inclusions have few limitations to use. Capability unit A3–IIIe–3.

Shubuta very fine sandy loam, very gently sloping phase (2 to 5 percent slopes) (SeB).—This soil has a dark grayish-brown surface soil that is thicker than that of Shubuta very fine sandy loam, eroded very gently sloping phase. The depth to the mottled soil material is greater than in most of the other Shubuta soils. Included with this soil are a few small areas that have a loamy fine sand surface soil as much as 18 inches thick and a few small areas that are nearly level.

This soil has good tilth and a moderately high capacity for holding available moisture. Although the fertility and content of organic matter are low, the response to fertilizer is good. This soil has few limitations to use. Capability unit A3–IIe–3.

Shubuta very fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (SeC2).—This eroded soil has a surface soil that ranges from about 4 to 12 inches in thickness. The color of the surface soil ranges from grayish brown in the less eroded areas to pale brown in the more eroded areas. The thickness of the solum and the depth to mottles are less than in Shubuta very fine sandy loam, eroded very gently sloping phase. A few shallow gullies have formed in places. This soil has more iron crust on the surface than the more nearly level Shubuta very fine sandy loams. Included with this soil is a small acreage that is only slightly eroded.

In cultivated areas of this soil, runoff is rapid and erosion is a serious hazard. The intensive use of sod crops will prevent further erosion. This soil is best suited to pasture or pine trees. Capability unit A3–IVe–2.

Shubuta very fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (SeD2).—This soil is similar to Shubuta very fine sandy loam, eroded very gently sloping phase, in color of the surface soil, but it varies more than the eroded very gently sloping phase in thickness of the solum. In some places where this soil is adjacent to Cuthbert soils, the solum is only 24 inches thick. Some areas have shallow gullies.

Mainly because of its slope and excessive runoff, this soil is not suited to crops. Some areas can be used for pasture if they are managed intensively. The grazing ought to be controlled so that adequate vegetation is kept on this soil at all times. Capability unit A3–VIe–1.

Shubuta sandy clay loam, severely eroded gently sloping phase (5 to 8 percent slopes) (SdC3).—This soil has lost most of its original sandy surface soil through erosion. Most of the acreage has scattered shallow to deep gullies. The surface soil varies between yellowish red and reddish brown in color. Other profile characteristics except texture of the surface soil are essentially the same as those of Shubuta very fine sandy loam, eroded very gently sloping phase.

Because of its slope and fine-textured subsoil, this soil has slow infiltration and rapid runoff. Tilth is less favorable than on the Shubuta very fine sandy loams. The fertility is low. Even under good management, this soil produces only fair yields of suitable pasture grasses and hay. Its best use is for pine trees. Capability unit A3–VIe–1.

Shubuta sandy clay loam, severely eroded sloping phase (8 to 12 percent slopes) (SdD3).—This soil is very similar to Shubuta sandy clay loam, severely eroded gently sloping phase, in profile characteristics, moisture content, and fertility. Because it is steeper and has more excessive runoff than the severely eroded gently sloping phase, it has fewer suitable uses. This soil is best suited to pine trees. Capability unit A3–VIIe 1.

Shubuta-Cuthbert soils

In some places in Montgomery County, the Shubuta soils and the Cuthbert soils are so intermingled that it is not feasible to map them separately. In these places, they are mapped together as soil complexes. A soil complex consists of two or more soils that occur together in a somewhat regular pattern that cannot be shown on a map of the scale used. The complexes of Shubuta and Cuthbert soils have a small total acreage that is mostly in the southwestern part of the county; the largest acreage is near Sellers. Most of the acreage occurs with Boswell soils and with areas of Shubuta and Cuthbert soils that were large enough to be mapped separately.

Shubuta and Cuthbert soils are shallow to moderately deep, moderately well drained to well drained, and strongly acid. They have developed on similar parent material. They vary considerably in slope, texture of the surface soil, and other profile characteristics. The slope ranges from 3 to 30 percent. In places the texture of the surface soil is very fine sandy loam, loamy fine sand, sandy clay loam, or clay, but in most places it is fine sandy loam or sandy clay loam. Generally, the Shubuta soils in these complexes are somewhat shallower than typical Shubuta soils.

About one-half the acreage of the soils of this complex has been cleared. A large part of this acreage has reverted to pine trees, and only a small acreage is in row crops. Most of the acreage that remains cleared is in pasture.

For a profile description of a Cuthbert soil, see Cuthbert fine sandy loam, eroded gently sloping phase; for one of a Shubuta soil, see Shubuta very fine sandy loam, eroded very gently sloping phase.

Shubuta-Cuthbert fine sandy loams, eroded very gently sloping phases (3 to 5 percent slopes) (SgB2).—These soils have a grayish-brown surface soil that ranges from 5 to 20 inches in thickness. Their fertility is low, but they respond well to fertilizer. Tilth is good. Included with these soils are a few acres that are only slightly eroded.

This mapping unit has a small total acreage. About one-half of it is in row crops, and the rest is in about equal acreages of pasture and pine trees. These soils have no severe limitations to use and produce fair yields under good management. Capability unit A3–IIIe–3.

Shubuta-Cuthbert fine sandy loams, eroded gently sloping phases (5 to 8 percent slopes) (SgC2).—These soils have a thinner solum, in most places, than Shubuta-Cuthbert fine sandy loams, eroded very gently sloping phases, but they are similar to the eroded very gently sloping phases in most other profile characteristics. They have steeper slopes, more rapid runoff, and greater erosion hazard. These soils are not suited to intensive use for row crops, but they produce fair yields of suitable pasture plants. Capability unit A3–IVe–2.

Shubuta-Cuthbert fine sandy loams, eroded sloping phases (8 to 12 percent slopes) (SgD2).—These soils have a surface soil that ranges from 3 to 15 inches in thickness and a subsoil that is normally thin (4 to 12 inches in thickness). A few shallow to deep gullies are on about three-fourths of the mapping unit. In many areas numerous iron crusts are on the surface and some are in the subsoil. Included with these soils are small slightly eroded areas and small areas similar to the Boswell soils.

The soils of this complex have a small total acreage. Because runoff is high and erosion is a serious hazard, row crops are not suitable and the use for pasture is limited. Pine trees are the best use for these soils. Capability unit A3–VIe–1.

Shubuta-Cuthbert sandy clay loams, severely eroded gently sloping phases (5 to 8 percent slopes) (ShC3).—These soils are steeper and more severely eroded than Shubuta-Cuthbert fine sandy loams, eroded gently sloping phases. Because most of the original sandy surface soil has been lost through erosion, the plow layer has slow infiltration. The slow infiltration, together with the steep slopes, causes very rapid runoff, and, in many places, a few shallow and deep gullies have formed. These soils have poor tilth and low fertility. They contain a small amount of organic matter. Included in this mapping unit is a small acreage that has a profile like that of the Boswell soils.

The soils of this complex are not suited to row crops. They produce fair yields of hay and pasture under intensive management that provides an adequate plant cover and sufficient fertilizer. Capability unit A3–VIe–1.

Shubuta-Cuthbert sandy clay loams, severely eroded sloping phases (8 to 12 percent slopes) (ShD3).—These soils have lost most of the original sandy surface soil through erosion, and, in a few places, the subsoil is mixed with the surface soil. Shallow to deep gullies have formed in most areas. The surface soil is yellowish red or reddish brown. The subsoil is generally thin, and, in some places, there is no definite horizon development. Included in this mapping unit are some areas that have a clay loam or a clay surface soil. Also included is a small acreage of Boswell soil that is intermingled with the Shubuta soil. Capability unit A3–VIIe–1.

Shubuta-Cuthbert complex, eroded, 12 to 30 percent slopes (SfE).—This mapping unit varies in most profile characteristics. The surface soil ranges from 3 to 18 inches in thickness. Its texture is loamy fine sand or fine sandy loam in the less eroded areas and ranges to sandy clay loam in the more severely eroded areas. Partly because of the steep slopes, the soils of this complex do not have so much profile development as those of other Shubuta-Cuthbert complexes. They are not eroded so much as soils of those complexes, because little of the acreage has been cleared. Nevertheless, these soils have rapid runoff, and most areas have some gullies. If these soils are used for trees, they need good forest management to prevent further gullying. Capability unit A3–VIIe–1.

Stough series

In this series are shallow, somewhat poorly drained, strongly acid soils. They are on the nearly level parts of stream terraces that consist of old alluvium. The alluvium was washed from soils on the Coastal Plain.

Stough soils have a light brownish-gray to dark-gray fine sandy loam surface soil and a light yellowish-brown, mottled, sandy clay loam subsoil. Their profile has a fragipan, in most places, at a depth of about 20 inches. The native vegetation is loblolly pine, shortleaf pine, blackgum, sweetgum, and gallberry.

The Stough soils occur with the Leaf and with the Byars and Myatt soils. These associated soils do not have a fragipan. The Stough soils are coarser textured than the Leaf soil and somewhat better drained. They are better drained than the Byars and Myatt soils and lighter colored in the surface soil.

Only one Stough soil is mapped in this county. It is in the southern part and has a small total acreage. About one-half is in trees, and the rest is in about equal amounts of pasture, crops, and idle land.

Stough fine sandy loam (0 to 3 percent slopes) (Sk).—The following describes a profile of this soil in a moist cultivated area:

- A_{1p} 0 to 7 inches, gray (2.5Y 5/0) fine sandy loam; weak, fine, crumb structure; very friable when moist and nearly loose when dry; strongly acid; abrupt, wavy boundary.
- A_3 7 to 12 inches, olive-brown (2.5Y 4/4) fine sandy loam with a few, faint, large mottles of dark gray (2.5Y 4/0); weak, medium, crumb structure; very friable; strongly acid; gradual, wavy boundary.
- B_2 12 to 22 inches, light yellowish-brown (2.5Y 6/4) sandy clay loam with common, fine, faint mottles of light olive brown (2.5Y 5/4) and gray (2.5Y 6/0); very weak, medium, subangular blocky structure; very friable when moist and slightly hard when dry; strongly acid; clear, smooth boundary.
- B_{3m} 22 to 32 inches, intensely mottled light-gray (10YR 7/1) and light olive-brown (2.5Y 5/6) sandy clay loam; massive (structureless) in most areas but has moderate, medium, subangular blocky structure in some; compact but friable when moist and hard and brittle when dry; strongly acid; gradual, wavy boundary.
- C 32 to 46 inches, intensely mottled yellowish-brown (10YR 5/8), light-gray (10YR 7/1), and red (2.5YR 5/8) sandy clay loam to sandy clay; moderate, medium, subangular blocky structure; firm when moist, hard when dry, and plastic when wet; strongly acid.

In some places the surface soil is lighter colored than that in the foregoing description, and in others the C horizon is fine clay. The depth to the fragipan ranges from 18 to 26 inches.

From the surface to the B_{3m} horizon, the permeability of this soil is moderate to moderately rapid. In the B_{3m} and C horizons, permeability is slow. Runoff is also slow, and this soil is wet until late in spring. It contains a small amount of organic matter and is low in natural fertility.

Use and management.—This soil is best suited to pasture. It produces moderate yields of suitable crops if mineral fertilizer and organic matter are added in sufficient amounts. Capability unit A3–IIIw–2.

Sumter series

In this series are moderately deep to deep, well-drained, moderately alkaline soils that are nearly level to gently sloping. These soils have developed from soft limestone, or Selma chalk. They have an olive-gray to very dark gray clay surface soil and a light-gray to pale-olive clay subsoil. The native vegetation consists of sedges, prairie grasses, legumes, and some cedar.

The Sumter soils occur with the Houston, Oktibbeha, Vaiden, Eutaw, and West Point soils. They are lighter colored than the Houston and West Point soils. Their parent material differs from that of the West Point soils, which is local alluvium. In color and in reaction the Sumter soils differ from the strongly acid Oktibbeha, Vaiden, and Eutaw soils.

Sumter soils make up almost one-tenth of the county. They are in large areas in a wide belt just south of Montgomery that extends across the county from east to west. Most of the acreage has been cleared and is used for pasture, hay, and small grain. Sumter soils are among the best in the county for pasture.

Sumter clay, eroded nearly level phase (1 to 3 percent slopes) (SmB2).—The following describes a profile of this soil:

- A_p 0 to 6 inches, olive-gray (5Y 5/2, moist) or light-gray (5Y 7/2, dry) clay; strong, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; a few, small, white, hard nodules of lime; moderately alkaline; clear, smooth boundary.
- BC 6 to 10 inches, light yellowish-brown (2.5Y 6/4) clay with few, fine, faint mottles of yellowish brown (10YR 5/8) and a few dark-gray (5Y 4/1) streaks along old root channels and worm casts; few white nodules of lime; weak, fine, subangular blocky to moderate, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; moderately alkaline; gradual, wavy boundary.
- C_1 10 to 22 inches, pale-olive (5Y 6/3) clay; moderate, fine to medium, angular blocky structure; friable when moist, hard when dry, and plastic when wet; few, white, hard nodules of lime; moderately alkaline; gradual, wavy boundary.
- C_2 22 to 38 inches, gray (5Y 6/1) clay with many, medium, faint mottles of light yellowish brown (2.5Y 6/4); moderate, medium, angular blocky structure to massive (structureless); firm when moist, hard when dry, slightly plastic when wet; few, small, white, hard nodules of lime; moderately alkaline; gradual, wavy boundary.
- C_3 38 to 50 inches, gray (5Y 6/1) clay with streaks and splotches of light yellowish brown (2.5Y 6/4); massive (structureless); very firm when moist and very hard when dry; moderately alkaline.

The surface soil ranges from gray to very dark gray. The subsoil is light gray to pale yellow. In many areas, the C horizon has a bluish cast. The number and size of the hard, white nodules vary considerably from place to place. The thickness of the solum ranges

from about 25 inches to 4 feet. Fossil shells are common in many areas.

Sumter clay, eroded nearly level phase, has low infiltration, slow permeability, and rapid runoff. The capacity for holding available moisture is high, but prolonged droughts cause the soil to crack.

Use and management.—This is one of the most extensive Sumter soils in the county. Its range in use is limited because of the somewhat unfavorable tilth, but it produces fair yields of most crops commonly grown in the county. It erodes unless it is well managed, but the eroded areas regain productivity if organic matter and fertilizer are added. This soil is best suited to grasses and legumes. Most clovers, other legumes, and johnsongrass reproduce well naturally. This is one of the best suited soils for small grain in the prairie section. It can produce good yields of alfalfa, but alfalfa is not widely grown. Capability unit A6–IIe–1.

Sumter clay, severely eroded nearly level phase (1 to 3 percent slopes) (SmB3).—This soil has a thinner surface soil and solum than Sumter clay, eroded nearly level phase, and contains less organic matter. Because of the low content of organic matter, the surface soil is light gray to almost white when it is dry. A few shallow gullies have formed in many areas.

This soil produces high yields of suitable crops, if enough organic matter and fertilizer are added and management is otherwise good. Although yields are somewhat lower on this soil than on the eroded nearly level phase, the two soils are suited to about the same kinds of crops. Capability unit A6–IIIe–1.

Sumter clay, eroded very gently sloping phase (3 to 5 percent slopes) (SmC2). This soil has steeper slopes and more rapid runoff than Sumter clay, eroded nearly level phase. It has, therefore, a more serious erosion hazard. Because of the better surface drainage, this soil is better suited to small grain than the more nearly level Sumter clays. Capability unit A6–IIIe–1.

Sumter clay, severely eroded very gently sloping phase (3 to 5 percent slopes) (SmC3). This severely eroded soil has a light gray to nearly white surface soil and a thin subsoil. The runoff is rapid, and shallow or deep guillies have formed on most of the acreage. If managed intensively, this soil can be restored to its normal productiveness. The reclamation will be rapid if the land is smoothed and large amounts of organic matter are added. Capability unit A6–IVe–1.

Sumter clay, eroded gently sloping phase (5 to 8 percent slopes) (SmD2).—This is the least extensive Sumter soil in the county. It is lighter colored in the surface soil than Sumter clay, eroded nearly level phase, and shallower to the unweathered chalk. The runoff is rapid, and on most of the acreage deep or shallow gullies have formed. Unless this soil is managed intensively, further erosion is very likely. Included with this soil is a small acreage that has slopes as steep as 15 percent. Capability unit A6–IVe–1.

Sumter clay, severely eroded gently sloping phase (5 to 8 percent slopes) (SmD3).—This soil varies considerably in slope, degree of erosion, and in profile characteristics. In places all of the surface soil and part of the subsoil have been washed away. The gray, partially weathered chalk is exposed in some places. Many shallow or deep gullies have formed on most of the acreage. Included with this soil is a small acreage that has slopes as steep as 15 percent.

Although the fertility is low and further erosion is likely, this soil can be reclaimed by intensive management. The management should include smoothing the land and adding large amounts of organic matter. Grazing ought to be controlled for a few years after the land is smoothed. Capability unit A6–VIe–1.

Sumter-Oktibbeha-Vaiden clays

In some small areas in Montgomery County, the Sumter clays, the Oktibbeha clays, and the Vaiden clays are so intermingled that it is not feasible to map them separately. They are mapped together as soil complexes and are locally called mixed prairie. They have a very spotty appearance in a clean-tilled field. The Sumter clays are the predominant soils in these complexes, and the Vaiden clays have the least acreage.

These soils are shallow to deep, moderately well drained to well drained, and strongly acid to mildly alkaline. The Sumter clays have developed from soft limestone, or Selma chalk; the Oktibbeha and Vaiden clays are on thin beds of acid clays overlying Selma chalk. The native vegetation on these clays is scattered. On the small areas of the Oktibbeha and Vaiden clays are some mixed hardwoods, but on the Sumter clays there are few, if any, trees.

The mapping units of these complexes occur with Sumter, Oktibbeha, and Vaiden soils that are mapped separately. They have essentially the same profile characteristics as the typical soils in their respective soil series, except that in these complexes the Oktibbeha and Vaiden clays range from a few inches to as much as 4 feet deep over the underlying calcareous materials. For a profile description of a Sumter soil, see Sumter clay, eroded nearly level phase; for one of a Oktibbeha soil, see Oktibbeha clay, eroded nearly level phase; and for one of a Vaiden soil, see Vaiden fine sandy loam, level phase.

More than nine-tenths of the acreage in these complexes is cleared and used primarily for pasture and hay.

Sumter-Oktibbeha-Vaiden clays, eroded nearly level phases (1 to 3 percent slopes) (SnB2).—In a plowed field, this mapping unit has a spotty appearance that is caused by various surface-soil colors occurring within a small area. These colors are gray to light gray, red to reddish brown, and yellowish brown. The subsoil also varies in color, but, in most places, the texture of both the surface soil and the subsoil is clay. Included in this mapping unit is a small acreage that is level and a small acreage that is severely eroded.

These soils have slow infiltration and permeability, but their capacity for holding available moisture is moderately high to high. They contain a small amount of organic matter and are low in fertility but respond well to additions of organic matter and fertilizer. Capability unit A6–IIe–1.

Sumter-Oktibbeha-Vaiden clays, eroded very gently sloping phases (3 to 5 percent slopes) (SnC2).—These soils are slightly steeper than Sumter-Oktibbeha-Vaiden clays, eroded nearly level phases, and have more rapid runoff and a more severe erosion hazard. They need, therefore, more intensive management to control erosion than is needed for the eroded nearly level phases. Capability unit A6–IIIe–1.

Sumter-Oktibbeha-Vaiden clays, severely eroded very gently sloping phases (3 to 5 percent slopes) (SnC3).—These soils have a thinner solum than Sumter-Oktibbeha-Vaiden clays, eroded nearly level phases. Most of the original surface soil and part of the subsoil have been lost through erosion. These soils are used and managed like Sumter clays, severely eroded very gently sloping phase. Capability unit A6–IVe–1.

Sumter-Oktibbeha-Vaiden clays, eroded gently sloping phases (5 to 8 percent slopes) (SnD2).—These soils vary more in profile characteristics than the more nearly level phases of the Sumter-Oktibbeha-Vaiden clays. In areas of Oktibbeha and Vaiden clays, the depth to the underlying calcareous material ranges from a few inches to as much as 3 feet. In areas of the Sumter clays, the partially weathered underlying material is exposed in places. These soils have rapid runoff and need to be kept under adequate vegetation at all times to prevent further erosion. Capability unit A6–IVe–1.

Sumter-Oktibbeha-Vaiden clays, severely eroded gently sloping phases (5 to 8 percent slopes) (SnD3).—Because these soils are more severely eroded than Sumter-Oktibbeha-Vaiden clays, eroded gently sloping phases, and have more gullies, they are less fertile and need more intensive management. If this management includes smoothing the land and adding adequate fertilizer and organic matter, the productivity of these soils will increase within a short period. Capability unit A6–VIe–1.

Sumter-Oktibbeha-Vaiden clays, severely eroded sloping phases (8 to 12 percent slopes) (SnE3).—Because these soils are severely eroded, the acid clay over the calcareous material is thin in many places. This clay ranges from a few inches to as much as 3 feet in thickness. These soils contain a small amount of organic matter and are low in fertility. Included in this mapping unit are a few small areas that have slopes as steep as 15 percent. Also included are some moderately eroded areas.

Although these soils are not fertile, they can be made moderately productive by intensive management. This management should include smoothing the land, adding fertilizer and organic matter, and controlling grazing. Capability unit A6–VIe–1.

Susquehanna series

In this series are deep, somewhat poorly drained, strongly acid soils that are nearly level to sloping. These soils are on thick beds of heavy acid clays. They have a light grayish-brown to dark-gray fine sandy loam surface soil and an intensely mottled clay subsoil. The native vegetation consisted of mixed oaks, gum, hickory, loblolly pine, and shortleaf pine.

The Susquehanna soils occur mostly with the Boswell, Cuthbert, and Sawyer soils. They have developed from parent material similar to that of the Boswell and Sawyer soils. Their subsoil is not red like that of the Boswell soils, or yellowish brown and friable like that of the Sawyer soils, or so thin as that of the Cuthbert soils. Susquehanna soils are finer textured, more mottled, and more plastic than the Cuthbert soils.

The Susquehanna soils are not extensive in Montgomery County. They are widely distributed in small areas, mostly throughout the southern third of the county. A large part of the acreage has been cleared and cultivated, but most of this has reverted to woods, primarily pine trees. The small acreage that remains cleared is used mostly for pasture.

Susquehanna fine sandy loam, eroded nearly level phase (1 to 3 percent slopes) (SoB2).—The following describes a profile of this soil in a moist wooded area:

- A_1 0 to 2 inches, grayish brown (2.5Y 5/2) fine sandy loam; very weak, fine, crumb structure; very friable when moist and nearly loose when dry; some partly decomposed forest litter and organic matter mixed in this horizon; strongly acid; abrupt, smooth boundary.
- A_2 2 to 6 inches, light brownish-gray (2.5Y 6/2) fine sandy loam with a few dark-brown organic stains from horizon above; weak, fine, crumb structure; very friable; strongly acid; abrupt, smooth boundary.
- B_2 6 to 20 inches, intensely mottled red (2.5YR 4/6), gray (2.5Y 6/0), reddish-brown (5YR 4/3), and light olive-brown (2.5Y 5/4) clay; moderate to strong, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.
- B_3 20 to 38 inches, gray (2.5Y 6/0) clay with many medium and some distinct mottles of red (2.5YR 4/6) and light olive brown (2.5Y 5/4); moderate, fine, subangular blocky structure; firm when moist, very hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.
- C 38 to 48 inches, light-gray (2.5Y 7/0) clay mottled and streaked with pale yellow (2.5Y 7/4) and yellowish red (5YR 5/6); massive (structureless); firm when moist, very hard when dry, and very plastic when wet; strongly acid.

In undisturbed wooded areas, the A horizon is dark gray or dark grayish brown; in cultivated areas, the A horizon is light brownish gray to light gray. The amount and degree of mottling vary from place to place. In a few areas, where this soil is adjacent to the Oktibbeha soils, calcareous material is found at depths of from 5 to 8 feet. The infiltration and permeability are slow.

Use and management.—Because this soil is fine textured and somewhat poorly drained, it is not suited to row crops. It is best suited to pasture or pine trees. Capability unit A3–VIe–1.

Susquehanna fine sandy loam, eroded very gently sloping phase (3 to 5 percent slopes) (SoC2).—This soil has essentially the same profile characteristics as Susquehanna fine sandy loam, eroded nearly level phase. Because it is steeper than the eroded nearly level phase, it is more eroded. It has rapid runoff and slow infiltration and permeability. This soil contains a small amount of organic matter and is low in fertility. It has poor tilth. Included with this soil are some areas that are severely eroded and have shallow to deep gullies.

This soil has a small total acreage. It is not suited to row crops and is best suited to pine trees or pasture. Capability unit A3–VIe–1.

Susquehanna fine sandy loam, eroded, 5 to 12 percent slopes (SoD2).—This soil is steeper and more severely eroded than Susquehanna fine sandy loam, eroded nearly level phase. Included with this soil are some severely eroded areas that have shallow to deep gullies and some areas that have slopes as steep as 15 percent. This soil is best used for pine trees. Capability unit A3 VIIe–1.

Swamp

Swamp (Sp).—This land type consists of low wet areas that are always covered with water or are saturated.

It is along drainageways and in depressions, mostly on stream terraces in the northern part of the county. The surface layer of Swamp is dark gray in most places, but, in some places, the upper 2 or 3 inches is black. The texture of the surface layer is silt loam, fine sandy loam, or silty clay. The outer borders of the areas of Swamp are generally coarser textured than the inner parts. In most places the subsurface layer ranges from silt loam to silty clay or clay. The native vegetation is cypress, bay, gum, willow, water oak, and a few pines.

Use and management.—Swamp is best used for trees and wildlife. Most areas would be expensive and difficult to drain. If they are drained, however, these areas produce moderate yields of corn and hay. Capability unit A3–IVw–1.

Terrace escarpments

Terrace escarpments (Ta).—This land type is on sharp breaks in the landscape, generally between two stream terraces of different elevations or between a stream terrace and the flood plain. Dominant slopes range from 15 to 25 percent. The soil material is sandy and gravelly and only slightly developed. It is not fertile. Most of the acreage is moderately to severely eroded, and numerous shallow to deep gullies have formed in many places.

Use and management.—Only a small acreage of this mapping unit has been cleared, and most of this is idle or has reverted to pine trees. This land type is not suited to crops. It is best used for pine trees. Some areas supply gravel that is used in road building and other construction work. Capability unit A3–VIIe–1.

Tuscumbia series

In this series are moderately deep to deep, somewhat poorly drained to poorly drained, neutral to calcareous soils that are nearly level. These soils occur on stream flood plains on material that was washed from the prairie section of the county and from other parts of the Coastal Plain. They have a gray to dark-gray silty clay or sandy loam surface soil that overlies gray, mottled silty clay to clay. The native vegetation is ash, elm, hackberry, Osage-orange, shagbark hickory, cottonwood, and willow oak.

The Tuscumbia soils occur mainly with the Leeper and Catalpa soils, and, to some extent, with the Kaufman and Una soils and Mixed alluvial land. They are lighter in color, more mottled, and more poorly drained than the Catalpa and Leeper soils. They have about the same drainage as the Una soils, which are neutral to mildly acid. The Tuscumbia soils have more uniform color and texture than Mixed alluvial land.

These soils have a fairly large total acreage and are widely distributed throughout the prairie section of the county. About one-half of this acreage is used for pasture, and the rest is about equally used as cropland and woodland.

Tuscumbia silty clay (0 to 2 percent slopes) (Tc).—The following describes a profile of this soil in a moist pasture:

A_{11} 0 to 8 inches, dark gray to very dark gray (5Y 4/1 to 3/1) silty clay; weak to moderate, medium, granular structure; friable when moist, slightly hard when dry, and plastic when wet; mildly alkaline; gradual, smooth boundary.

A_{12} 8 to 20 inches, dark-gray (5Y 4/1) silty clay with common, faint, medium mottles of olive (5Y 5/6) and light olive brown (2.5Y 5/6); weak, medium, granular structure to massive (structureless); friable to firm when moist, hard when dry, and very plastic when wet, mildly alkaline; gradual, smooth boundary.

C_g 20 to 44 inches, gray (5Y 5/1) silty clay with many faint to distinct, medium mottles of olive (5Y 4/4), dark grayish brown (2.5Y 4/2), and brown (10YR 5/3); massive (structureless); firm when moist, hard when dry, and very plastic when wet; mildly alkaline.

The A horizon ranges from dark gray to gray in color. In some places, particularly along the larger streams, the C horizon is clay. Included with this soil are some areas having a clay subsoil.

Tuscumbia silty clay has moderately slow runoff and permeability and is likely to be flooded frequently. Its capacity for holding available moisture is moderately high to high. The natural fertility and content of organic matter are moderately high.

Use and management.—This soil is restricted in its use because of the frequent flooding. It is not suited to row crops but, under good management, produces good yields of summer pasture and hay. Capability unit A6–IIIw–2.

Tuscumbia fine sandy loam (0 to 2 percent slopes) (Tb).—This soil has a coarser textured surface soil and substratum than Tuscumbia silty clay but, in other respects, is similar to the silty clay in profile characteristics. It has better tilth than the silty clay. Included with this soil are a few small areas that have a sand surface soil. The sand is recent overwash. Tuscumbia fine sandy loam needs about the same management as the silty clay. Capability unit A6–IIIw–2.

Una series

This series contains moderately deep to deep, poorly drained, neutral to slightly acid soils that have a high water table part of the year. These soils are on nearly level stream flood plains. Their parent material was washed mostly from the acid soils on the prairie section and on other parts of the Coastal Plain, but the parent material contains an admixture from the calcareous soils on the prairie section. These soils have a grayish-brown clay to silty clay surface soil and a light-gray mottled clay subsoil. The native vegetation is elm, ash, hackberry, Osage-orange, shagbark hickory, and willow oak.

The Una soils occur primarily with the Kaufman soils and Mixed alluvial land and, to some extent, with the Tuscumbia and Leeper soils which are mildly alkaline. They are more poorly drained, more gray, and more intensely mottled than the Kaufman soils and are more poorly drained than the Leeper soils. They are more uniform in texture and in color throughout the profile than Mixed alluvial land.

Only one of the Una soils is mapped in Montgomery County. This soil is widely distributed throughout the prairie section of the county. About seven-tenths of the acreage is used for trees, and a large part of the rest is used for pasture. Only a few small areas are in row crops.

Una clay (0 to 2 percent slopes) (Ua).—The following describes a profile of this soil in a moist wooded area:

A_{11} 0 to 5 inches, grayish-brown (10YR 5/2) clay; weak, medium, granular structure; friable when moist, slightly hard when dry, and very plastic when wet; slightly acid; gradual, wavy boundary.

A_{12} 5 to 18 inches, gray (10YR 5/1) clay mottled with brown (10YR 5/3) and light yellowish brown (10YR 6/4); mostly massive (structureless); firm when moist, hard when dry, and very plastic when wet; medium acid; gradual, wavy boundary.

C_{1g} 18 to 38 inches, gray (10YR 6/1) clay with common, distinct, medium mottles of dark grayish brown (10YR 4/2), pale yellow (2.5Y 7/4), and light olive brown (2.5Y 5/4); massive (structureless); firm when moist, hard when dry, and very plastic when wet; medium acid; diffuse, wavy boundary.

C_{2g} 38 to 48 inches light-gray (10YR 7/2) clay with many faint, medium mottles of grayish brown (10YR 5/2) and gray (10YR 6/1); massive (structureless); firm when moist, hard when dry, and very plastic when wet; strongly acid.

In some places the C horizon consists of stratified layers of sand, sandy clay loam, and clay. In these places the A horizon is very dark gray. This soil has slow permeability and runoff and is susceptible to frequent flooding. It has a moderately high capacity for holding available moisture. The natural fertility and content of organic matter are moderately high. Included with this soil are some small areas that have a sandy clay loam surface soil.

Use and management.—The use of this soil is limited by its susceptibility to flooding. It will produce good yields of summer pasture if it is adequately fertilized and is seeded to suitable plants. Capability unit A6–IIIw–1.

Vaiden series

In this series are deep, somewhat poorly drained to moderately well drained, strongly acid soils that are level to gently sloping. These soils are on thin beds of acid clay over limy material. Their surface soil is dark grayish brown fine sandy loam to very dark grayish-brown silty clay. Their subsoil is either clay or sandy clay that is yellowish brown in the upper part and intensely mottled in the lower part. The native vegetation is hickory, post oak, white oak, red oak, and shortleaf pine.

The Vaiden soils occur primarily with the Eutaw and Oktibbeha soils. They are better drained than the Eutaw soils, which have a gray instead of a yellowish-brown upper subsoil. They are not so well drained as the Oktibbeha soils, which have a red subsoil.

The Vaiden soils are moderately extensive in Montgomery County. Most of the acreage is fairly well distributed throughout the prairie section. About three-fourths of the acreage has been cleared and is used primarily for pasture and hay.

Vaiden fine sandy loam, level phase (0 to 1 percent slopes) (VaA).—The following describes a profile of this soil in a moist pasture:

A_{1p} 0 to 2 inches, dark grayish-brown (2.5Y 4/2) fine sandy loam; weak, fine, crumb structure; very friable; medium acid; clear, wavy boundary.

A_{2p} 2 to 6 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak, fine, crumb structure; very friable; medium acid; clear, wavy boundary.

B_2 6 to 18 inches, yellowish-brown (10YR 5/8) fine sandy clay with few, distinct, medium mottles of yellowish red (5YR 4/8) in the lower part; weak, medium, subangular blocky structure; friable when moist, plastic when wet, and hard when dry; medium to strongly acid; clear, smooth boundary.

B_3 18 to 30 inches, intensely mottled light olive-brown (2.5Y 5/4), red (2.5YR 4/8), and light olive-gray (5Y 6/2) fine sandy clay to clay; mottles are medium and distinct; moderate, medium, subangular blocky structure; firm when moist, plastic when wet, and very hard when dry; strongly acid; gradual, smooth boundary.

C 30 to 44 inches, intensely mottled red (2.5YR 4/8), light olive-gray (5Y 6/2), and light olive-brown (2.5Y 5/4) clay; mostly massive but some moderate, medium, subangular blocky structure; very firm when moist, slightly plastic when wet, and very hard when dry; strongly acid.

The A horizon ranges in thickness from 4 to 10 inches. The depth to the intensely mottled zone ranges from 12 to 20 inches. Concretions of lime occur at depths of 30 to 60 inches. Included with this soil are areas of very fine sandy loam and areas of silt loam.

This soil has medium infiltration and moderate permeability to depths of about 18 inches. The capacity for holding available moisture is moderately high. Although fertility is moderate to moderately low, this soil responds well to fertilizer. The tilth is good.

Use and management.—A larger percentage of this inextensive soil than of Vaiden silty clay, level phase, is used for cultivated crops. Moderate yields of most crops grown in the county can be obtained. Capability unit A6–IIe–2.

Vaiden fine sandy loam, nearly level phase (1 to 3 percent slopes) (VaB).—This soil has essentially the same profile characteristics as Vaiden fine sandy loam, level phase. It has, however, more rapid runoff than the level phase, and water does not remain on the soil for long periods after rains. This soil, therefore, can be cultivated earlier in the spring than the level phase. Capability unit A6–IIe–2.

Vaiden fine sandy loam, eroded nearly level phase (1 to 3 percent slopes) (VaB2).—This eroded soil has a thinner surface soil than Vaiden fine sandy loam, level phase, and slower infiltration and much more rapid runoff. It needs more intensive management than the level phase. It is low in fertility and contains a small amount of organic matter. In cultivated fields, some of the subsoil has been mixed with the sandy surface soil. Because of this mixing, the plow layer has a yellowish cast and is finer textured than the plow layer of the level phase. Included with this soil is a small acreage that is severely eroded and a few areas that have occasional shallow gullies.

Although this soil has about the same range in use as the level phase, yields are lower than the level phase unless management is intense. Capability unit A6–IIe–2.

Vaiden fine sandy loam, eroded very gently sloping phase (3 to 5 percent slopes) (VaC2). This soil has a thin sandy surface soil that ranges from 1 to 4 inches in thickness. In cultivated areas the plow layer has a yellowish cast because the yellowish-brown subsoil has been mixed into it. In many places the depth to the lime material is less than it is in Vaiden fine sandy loam, level phase. Much of the acreage has a few shallow gullies. Because runoff is rapid, this soil should be kept permanently in grass to protect it from erosion. A larger part of this soil than of the more nearly level phases is used for pasture. Capability unit A6–IIIe–2.

Vaiden fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (VaD2).—This eroded soil has a surface soil, 1 to 4 inches thick, that is thinner and lighter colored than that of the more nearly level phases. It also has a thinner solum. The depth to the calcareous

material varies considerably, and small patches of lime crop out in a few places. Runoff is very rapid. Unless this soil is kept adequately covered with vegetation, erosion is a serious hazard. This soil, therefore, can be best used for hay and pasture. If it is fertilized and otherwise well managed, it produces moderate yields of these crops. Capability unit A6–IVe–2.

Vaiden fine sandy loam, eroded sloping phase (8 to 12 percent slopes) (VaE2).—This soil is more variable in profile characteristics than the more nearly level phases of Vaiden fine sandy loam. The surface soil ranges in thickness from 1 to 5 or 6 inches; in some places, the underlying calcareous material is exposed. A few gullies have formed in some areas. A small acreage has slopes of 12 to 15 percent. Because runoff is excessive, this soil needs to be kept in permanent vegetation to protect it from erosion. Capability unit A6–VIe–2.

Vaiden silty clay, level phase (0 to 1 percent slopes) (VbA).—The following describes a profile of this soil in a moist pasture:

A_p 0 to 3 inches, very dark grayish-brown (10YR 3/2) silty clay; weak, fine, granular structure; friable when moist, slightly hard when dry, and plastic when wet; medium acid to strongly acid; clear, smooth boundary.

B_1 3 to 8 inches, brown (10YR 5/3) silty clay to clay with a few very dark grayish-brown (10YR 3/2) organic stains; weak, medium, granular to weak, fine, subangular blocky structure; firm when moist, hard when dry, and very plastic when wet; strongly acid; clear, smooth boundary.

B_2 8 to 24 inches, yellowish-brown (10YR 5/6) clay with a few, faint, medium mottles of gray (10YR 5/1) and dark brown (10YR 4/3); weak, medium, subangular blocky structure; firm when moist, hard when dry, and very plastic when wet; strongly acid; gradual, wavy boundary.

C 24 to 42 inches, intensely mottled light olive-brown (2.5Y 5/4), red (2.5YR 4/8) and gray (2.5Y 6/0) clay; moderate; massive (structureless); firm when moist, very plastic when wet, and very hard when dry; strongly acid; gradual, wavy boundary.

The A horizon ranges from 2 to 5 inches in thickness. The depth to the calcareous material ranges from only a few inches to 60 inches. Included with this soil are some small areas that have a clay surface soil.

This soil has a slower infiltration and permeability than Vaiden fine sandy loam, level phase. Its natural fertility and capacity for holding available moisture are about the same as for the level phase, but its tilth is somewhat less favorable. This soil responds well to fertilizer.

Use and management.—This soil has a small total acreage, a larger part of which is used for pasture than for row crops. Capability unit A6–IIe–2.

Vaiden silty clay, nearly level phase (1 to 3 percent slopes) (VbB).—This soil has steeper slopes than Vaiden silty clay, level phase, and more rapid runoff. It is somewhat lighter colored in the surface soil than the level phase. It is similar to the level phase in capacity for holding available moisture, response to fertilizer, and suitability for use. Capability unit A6–IIe–2.

Vaiden silty clay, eroded nearly level phase (1 to 3 percent slopes) (VbB2).—This soil has a thinner surface soil than Vaiden silty clay, level phase. In cultivated fields the surface soil has a yellowish cast that is the result of the yellowish-brown subsoil being mixed into the plow layer. The infiltration and permeability are slower than for the level phase, and runoff is more rapid. Although the natural fertility is low, this soil produces good yields of pasture and hay if it is adequately fertilized and otherwise well managed. Included with this soil is a small acreage that has lost most of the original surface soil through erosion. Capability unit A6–IIe–2.

Vaiden silty clay, eroded very gently sloping phase (3 to 5 percent slopes) (VbC2).—This soil is similar to Vaiden silty clay, eroded nearly level phase, in profile characteristics and in use suitability. Because it is steeper, however, it needs more exacting management to protect it from further erosion. Capability unit A6–IIIe–2.

Vaiden silty clay, severely eroded very gently sloping phase (3 to 5 percent slopes) (VbC3).—This soil has lost most of the original surface soil through erosion, and a few gullies have formed on most of the acreage. In a few places the underlying marl is exposed. The surface soil is olive brown to yellowish brown. Runoff is very rapid, mainly because infiltration and permeability are slow. Included with this soil are some areas that have a clay surface soil and a few sandy areas that are remnants of the original surface soil. If this soil is to be restored to its former productiveness, it must be managed intensely. Management ought to include adding fertilizer and controlling grazing to maintain the ground cover. Capability unit A6–IVe–2.

Vaiden silty clay, eroded gently sloping phase (5 to 8 percent slopes) (VbD2).—This soil has lost about one-half of the original surface soil through erosion. A few shallow gullies have formed and, in places, the underlying lime material is exposed. The solum varies in thickness from place to place. The lower part of the subsoil normally is thinner than that of the more nearly level phases of Vaiden silty clay. Included with this soil is a small area that has slopes as steep as 15 percent.

This soil needs intensive management to protect it against further erosion. Most of the acreage ought to be used for pasture that is managed well, or for pine trees. Capability unit A6–IVe–2.

Vaiden silty clay, severely eroded gently sloping phase (5 to 8 percent slopes) (VbD3).—This soil has shallow to deep gullies on most of its acreage. The solum varies in thickness from place to place, and the depth to the underlying concretions of lime ranges from a few inches to several feet. Included with this soil are a few small areas that have slopes as steep as 15 percent and a few small areas that have a clay surface soil.

Because runoff is rapid, this soil needs intensive management to protect it against further erosion. If this soil is used for pasture, grazing must be controlled so that adequate vegetation is maintained. Capability unit A6–VIe–2.

Waugh series

This series consists of moderately deep, moderately well drained, level to very gently sloping soils on the stream terraces. These soils are strongly acid. They have formed from material that was washed from the Coastal Plain upland and contains an admixture of material washed from the Piedmont upland. Waugh soils have a grayish-brown fine sandy loam or sandy loam surface soil and a yellowish-brown silty clay loam subsoil. The native vegetation is loblolly pine, blackgum, sweetgum, and some oak.

The Waugh soils occur primarily with the Flint, Izagora, and Byars and Myatt soils, and to some extent with the Cahaba and Wickham soils. In drainage, the Waugh soils are similar to the Flint soils, which have a red or yellowish-red subsoil instead of a yellowish-brown one. They are finer textured in the subsoil than the Izagora soils and are more brittle and less sticky in the substratum.

The Waugh soils have a small total acreage, most of which has been cleared and is used for row crops. These soils are mostly in the vicinity of Mount Meigs and the State Reform School.

Waugh fine sandy loam, level phase (0 to 2 percent slopes) (WaA).—The following describes a profile of this soil in a moist cultivated field:

A_p 0 to 5 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak, fine, crumb structure; very friable; medium acid; clear, smooth boundary.

B_1 5 to 8 inches, light olive-brown (2.5Y 5/4) light fine sandy clay loam; very weak, fine, subangular blocky structure; friable when moist and slightly hard when dry (plowpan); medium acid; gradual, smooth boundary.

B_2 8 to 17 inches, yellowish-brown (10YR 5/6) silty clay loam; weak, fine to medium, subangular blocky structure; friable when moist, slightly hard when dry, and sticky when wet; strongly acid; clear, smooth boundary.

B_{31} 17 to 25 inches, yellowish-brown (10YR 5/6) silty clay loam with a few, coarse, distinct mottles of dark red (2.5YR 3/6); weak, medium, subangular blocky structure; friable when moist, slightly hard when dry, and sticky when wet; few, small, manganese concretions; strongly acid; gradual, smooth boundary.

B_{32} 25 to 36 inches, mottled yellowish-brown (10YR 5/6), light olive-brown (2.5Y 5/6), and dark-red (2.5YR 3/6) silty clay that contains a little coarse sand; moderate, fine, subangular blocky structure; firm when moist and hard when dry; strongly acid; gradual, smooth boundary.

C 36 to 48 inches, red (2.5YR 5/6) silty clay with many, medium, distinct mottles of light olive brown (2.5Y 5/6); massive (structureless); firm when moist and very hard when dry; contains a little coarse sand and some mica flakes; very strongly acid.

The surface soil is grayish brown to light brownish gray. The solum ranges from 30 to 40 inches in thickness. Where it is associated with the Wickham soils, this soil contains much mica, particularly in the lower layers.

Included with this soil are areas that have a sandy loam surface soil. Also included are small areas of Wahee soils that have a thinner solum than the rest of the mapping unit. Wahee soils are not mapped separately in Montgomery County.

Waugh fine sandy loam, level phase, has low natural fertility and contains little organic matter. It has medium infiltration. The permeability is moderate from the surface through the B_2 horizon and slow below this horizon.

Use and management.—Nearly all of this soil has been cleared and is used mainly for cotton, corn, and vegetables. It is suited to a fairly wide range of crops and has good yields if it is well managed. It is well suited to pasture and fairly well suited to small grain. This soil is easy to manage. Capability unit A3–IIe–2.

Waugh fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (WaB2).—This soil occurs primarily on areas that slope from Waugh fine sandy loam, level phase, to natural sloughs or drainageways. It has a light olive-brown surface soil, in contrast to the grayish-brown one of the level phase. Part of the surface soil has been lost through erosion. Included with this soil are areas that have a yellowish-brown silty loam surface soil.

This soil has greater runoff than the level phase and less natural fertility. Although it is suited to about the same crops as the level phase, its yields are somewhat lower than those on the level phase. For protection against erosion, this soil needs more intensive management than the level phase. Capability unit A3–IIIe–2.

Wehadkee series

In this series are deep, poorly drained, strongly acid soils that are nearly level. These soils are on flood plains, where they developed from material that was washed primarily from soils on the Piedmont. Locally, they contain material from the Coastal Plain. The Wehadkee soils have a gray to dark-gray silt loam surface soil and a gray, mottled, silty clay loam to silty clay subsoil. The native vegetation is sweetgum, blackgum, water oak, elm, hickory, beech, poplar, and alder.

These soils occur with the Congaree and Chewacla soils and are the poorest drained members of the Congaree-Chewacla-Wehadkee catena. The Wehadkee soils have a predominantly gray profile, but the Congaree and Chewacla soils are brown. Because of their somewhat lower elevation, the Wehadkee soils are flooded more frequently than are the Congaree and Chewacla soils.

Only one Wehadkee soil is mapped in Montgomery County. This soil has a small total acreage. Most of it is along the Alabama and Tallapoosa Rivers in the northern part of this county. About nine-tenths of this acreage is in woodland, and the rest is in pasture or is idle.

Wehadkee silt loam (0 to 2 percent slopes) (Wb).—The following describes a profile of this soil in a moist wooded area:

A_1 0 to 6 inches, dark-gray (10YR 4/1) silt loam with few, fine, faint mottles of dark brown (10YR 4/3); weak, medium, granular structure; friable; strongly acid; clear, smooth boundary.

AC_g 6 to 24 inches, gray (10YR 6/1) silty clay loam with common, fine, faint mottles of pale brown (10YR 6/3), yellowish brown (10YR 5/4), and dark brown (10YR 4/3); very weak, coarse, granular structure; firm to friable when moist, slightly hard when dry, and slightly sticky when wet; strongly acid; gradual, smooth boundary.

C_g 24 to 44 inches, light-gray (10YR 7/1) silty clay loam mottled with light brownish gray (2.5Y 6/2), light olive brown (2.5Y 5/4), and gray (2.5Y 5/0); structureless; firm when moist, hard when dry, and slightly sticky when wet; strongly acid.

The surface soil ranges from gray to very dark gray. From place to place the intensity and pattern of the mottling vary. Included with this soil are areas that have a silty clay loam to silt surface soil.

Wehadkee silt loam is moderately high in fertility and has a moderately high capacity for holding available moisture. It is likely to be flooded frequently.

Use and management.—This soil is not suited to crops. Its best use is for woodland. Some of the better drained areas could be used for summer pasture. If used for pasture, this soil needs additions of fertilizer and lime. Capability unit A3–IVw–1.

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West Point series

This series consists of deep, moderately well drained to well drained, moderately calcareous soils that are nearly level to very gently sloping. These soils have developed from material washed from Sumter, Houston, and similar soils. They are at the base of slopes and the head of small drainageways. They have a surface soil of very dark gray to black clay that is underlain by a very dark gray to dark olive-gray clay. The native vegetation is Osage-orange, elm, hackberry, some oak, and prairie grasses.

These soils are below the Houston and Sumter soils on the uplands and are above Catalpa and Leeper soils on the flood plains. They have developed from local alluvium, whereas the Houston and Sumter soils have developed in place. West Point soils are darker colored than the Sumter, Catalpa, and Leeper soils. They are not so susceptible to overflow as the Catalpa and Leeper soils.

These soils have a large total acreage that is widely distributed throughout the prairie section of the county. More than nine-tenths of this acreage has been cleared, and more than three-fourths of this cleared acreage is in pasture. Most of the rest of the cleared acreage is in corn and small grains.

West Point clay, level phase (0 to 1 percent slopes) (WcA).—The following describes a profile of this soil in a moist pasture area:

- A_{1p} 0 to 11 inches, black (5Y 2/1) clay; moderate to strong, medium granular structure; firm when moist, hard when dry, and very plastic when wet; moderately alkaline; gradual, wavy boundary.
- C 11 to 33 inches, dark olive-gray (5Y 3/2) clay; moderate, medium subangular structure; firm when moist, very hard when dry, and very plastic when wet; moderately alkaline; clear, irregular boundary; this layer tongues into the layer below.
- D 33 to 45 inches, light olive-brown (2.5Y 5/6) clay streaked with olive gray (5Y 4/2); massive (structureless); firm to very firm when moist, hard when dry, and very plastic when wet; moderately alkaline; many hard nodules of lime as much as 1 inch across.

The surface soil is very dark gray to black, and the subsoil is very dark gray to dark olive gray. The local alluvium is 25 inches to several feet thick. In some places the C horizon is underlain by partly weathered Selma chalk.

This soil has moderately slow to slow permeability and a high capacity for holding available moisture. It does, however, check and crack rather severely during prolonged droughts. It is one of the most fertile soils in the prairie section of the county and is moderately high in organic matter. Because this soil is fine textured and plastic, tilth is not always favorable for growing certain row crops. Corn and small grain, however, are grown on some areas. Runoff is slow on the more nearly level areas.

Use and management.—This soil is suited to most of the grasses and clovers that are commonly grown in the county. It is one of the most suitable soils for pasture and hay in the prairie section. Capability unit A6–IIe–3.

West Point clay, nearly level phase (1 to 3 percent slopes) (WcB).—This soil has a lighter colored surface soil than that of West Point clay, level phase, but it is similar to the level phase in most other profile characteristics. It has more rapid runoff than the level phase and is, therefore, better suited to small grain. Included with this soil is a small acreage that has slopes of from 3 to 6 percent. Erosion is active on these sloping inclusions, but the more nearly level areas continuously receive deposits. Capability unit A6–IIe–3.

Wickham series

In this series are deep, well-drained, strongly acid soils that are level to gently sloping. These soils developed on the stream terraces on alluvium. Most of this alluvium was washed from the soils on the Piedmont, but locally it contains material washed from soils on the Coastal Plain. Wickham soils have a dark grayish-brown to dark yellowish-brown fine sandy surface soil. Their subsoil is dark-brown to yellowish-red sandy clay or silty clay. The native vegetation is mixed oaks, blackgum, sweetgum, birch, maple, loblolly pine, and shortleaf pine.

The Wickham soils occur mainly with the Altavista, Augusta, and Roanoke soils and, to some extent, with the Cahaba, Flint, and Waugh soils. They are somewhat better drained than the Altavista soils and are yellowish red instead of yellowish brown in the subsoil. They are much better drained than the Augusta and Roanoke soils and are not mottled in the subsoil. Although Wickham soils are similar to the Cahaba soils in color, they are finer textured than the Cahaba and developed from different parent material. They are somewhat better drained than the Flint and Waugh soils and are more friable throughout the profile.

These soils are moderately extensive. Most of the acreage is on stream terraces along the Alabama and Tallapoosa Rivers. The largest areas are northwest of Montgomery near Hunter and northeast of Montgomery near Madison. Almost all the acreage has been cleared and is in about equal acreages of row crops and pasture. Some of the cleared areas have reverted to pine trees.

Wickham fine sandy loam, level phase (0 to 2 percent slopes) (WdA).—The following describes a profile of this soil in a moist pasture:

- A_p 0 to 6 inches, dark-brown (10YR 4/3) fine sandy loam; weak, fine, crumb structure; very friable; strongly acid; clear, smooth boundary.
- B_2 6 to 20 inches, yellowish-red (5YR 4/8) to red (2.5YR 4/8) fine sandy clay; weak to moderate, fine, subangular blocky structure; firm when moist, sticky when wet, and hard when dry; strongly acid; contains some mica; gradual, smooth boundary.
- B_3 20 to 32 inches, yellowish-red (5YR 4/8) fine sandy clay loam; weak, fine, subangular blocky structure; friable when moist and slightly hard when dry; strongly acid; contains some mica flakes; gradual, smooth boundary.
- C 32 to 40 inches, yellowish-red (5YR 4/8) light fine sandy clay loam with few, coarse, distinct mottles of pale brown (10YR 6/3); very weak, subangular blocky structure; very friable; strongly acid; contains some mica; clear, smooth boundary.
- D_r 40 to 50 inches, mostly sand and gravel.

The surface soil ranges from grayish brown to dark yellowish brown in color and from 4 to 10 inches in thickness. The subsoil is sandy clay to silty clay. Large areas of this soil are underlain by sand and gravel at depths of 3 to 8 feet. The amount of mica in this soil varies considerably from place to place. Where it is adjacent to Wickham silt loam, this soil is commonly about 6 to 12 inches higher than the silt loam.

This soil is slowly permeable and has a moderately

high capacity for holding available moisture. It is moderately low in natural fertility and contains a moderately small amount of organic matter. The tilth is fairly good. Although this soil is flooded occasionally, flooding is not a severe hazard, because the floods are infrequent.

Use and management.—Wickham fine sandy loam, level phase, has a wide range of use. It is suited to most row crops, pasture grasses, and clovers grown in the county. If fertilizer is added, this soil responds well. The more nearly level areas do not need exacting management, but other areas may have severe sheet erosion unless they are adequately protected. Capability unit B10–I–1.

Wickham fine sandy loam, eroded very gently sloping phase (2 to 5 percent slopes) (WdB2).—This eroded soil has a 3- to 4-inch surface soil that is thinner than that of Wickham fine sandy loam, level phase. The surface soil is brown to dark yellowish brown instead of dark brown because part of the subsoil has been mixed with it. In other respects this soil is similar to the level phase in profile characteristics. Included with this soil are some areas that have a heavy fine sandy loam surface soil.

Because this soil has steeper slopes and slower infil tration than the level phase, it has more rapid runoff. It needs stricter management than the level phase. Heavy additions of fertilizer and much organic matter must be added if yields are to be high. Capability unit A3–IIe–1.

Wickham fine sandy loam, eroded gently sloping phase (5 to 8 percent slopes) (WdC2).—This eroded soil has a surface soil that ranges from a fraction of an inch to 3 or 4 inches in thickness and is thinner than that of Wickham fine sandy loam, level phase. Where almost all of the original surface soil has been removed through erosion, the plow layer is yellowish red to reddish brown. In other respects this soil is similar to the level phase in profile characteristics.

This soil has slower infiltration and permeability than the level phase. It has considerably higher runoff than the level phase and needs more exacting management. Capability unit A3–IIIe–1.

Wickham silt loam (0 to 2 percent slopes) (We).—The following describes a profile in a moist cultivated field:

A_{1p} 0 to 7 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, fine granular structure; friable when moist, slightly sticky when wet, and slightly hard when dry; strongly acid; clear, smooth boundary.

B_2 7 to 20 inches, dark-brown (7.5YR 4/4) silty clay; weak, fine, subangular blocky structure; firm when moist, hard when dry, and sticky when wet; strongly acid; contains some mica; gradual, smooth boundary.

B_3 20 to 44 inches, strong-brown (7.5YR 5/8) silty clay loam with few, fine, faint mottles of dark brown (7.5YR 3/2) and yellowish brown (10YR 5/8); weak, fine, subangular blocky structure to massive (structureless); firm when moist, slightly sticky when wet, and hard when dry; very strongly acid; contains some mica; gradual, smooth boundary.

C 44 to 52 inches, strong-brown (7.5YR 5/8) heavy silt loam with few, fine, faint mottles of brownish yellow (10YR 6/6); massive (structureless); friable when moist and slightly hard when dry; very strongly acid; contains some fine sand and mica.

The surface soil, in some places, is dark brown or dark yellowish brown. It ranges from 3 to 8 inches in thickness.

This soil has slow runoff and generally remains wet somewhat later in spring than the Wickham fine sandy loams. Because sediments are more frequently deposited by floodwaters, this soil is slightly more fertile than the fine sandy loams and slightly higher in organic matter. Flooding, however, is not very frequent and is not a serious hazard in most areas.

Use and management.—This soil is well suited to cotton, corn, truck crops, hay, small grain, and pasture. A complete fertilizer ought to be applied annually, and lime and organic matter added at longer intervals. Capability unit B10–I–1.

Wilcox series

In this series are deep, somewhat poorly drained to moderately well drained, strongly acid soils. These soils are level to nearly level and have formed on beds of gray shales that are hardened in some places. They have a grayish-brown clay surface soil and a mottled clay subsoil. The native vegetation consists of mixed hardwoods, loblolly pine, shortleaf pine, sweetgum, blackgum, and oak.

The Wilcox soils occur with the Susquehanna, Boswell, and Sawyer soils. They are somewhat better drained than the Susquehanna soils and are redder in the subsoil. Their subsoil differs from the red, mottle-free subsoil in the Boswell soils and from the light olive-brown subsoil in the Sawyer soils. The Wilcox soils are underlain by clay shales, whereas the Boswell and Sawyer soils are underlain by heavy, acid clays.

Wilcox soils are not extensive in Montgomery County. All of the acreage is in the south-central part of the county. About one-half of it has been cleared and is used primarily for pasture.

Wilcox clay loam, level phase (0 to 1 percent slopes) (WfA).—The following describes a profile of this soil in a moist pasture:

A_p 0 to 3 inches, dark grayish-brown (10YR 4/2) clay loam; weak, medium, granular structure; friable when moist, sticky when wet, and slightly hard when dry; strongly acid; clear, smooth boundary.

B_1 3 to 9 inches, dark yellowish-brown (10YR 4/4) clay loam to clay with common, medium, faint mottles of gray (10YR 5/1) and yellowish brown (10YR 5/8); weak, fine, subangular blocky structure to massive (structureless); firm when moist, plastic when wet, and hard when dry; very strongly acid; gradual, smooth boundary.

B_2 9 to 26 inches, yellowish-red (5YR 4/6) clay with common, medium, distinct mottles of gray (10YR 5/1) and strong brown (7.5YR 5/8); massive (structureless); firm when moist, very plastic when wet, and very hard when dry; very strongly acid; gradual, smooth boundary.

C_1 26 to 42 inches, intensely mottled yellowish-red (5YR 4/6), gray (10YR 5/1), and brown (10YR 5/3) clay; massive (structureless); firm when moist, very plastic when wet, and very hard when dry; very strongly acid; clear, smooth boundary.

C_2 42 to 50 inches, partly weathered, gray, indurated, clay shales.

The depth to the gray shale material varies from about 35 inches to several feet. In slightly eroded areas the surface soil has a reddish cast. In some places a few iron crusts are on the surface.

This soil has slow infiltration and permeability. Runoff is high on the more sloping areas. The capacity for holding available moisture is moderately high, but nat-

ural fertility and the content of organic matter are low. Tilth is poor.

Use and management.—This soil is not well suited to row crops. Under good management that includes adequate fertilization, moderately good to good pasture can be obtained. Capability unit A3–VIe–1.

Wilcox clay loam, eroded nearly level phase (1 to 3 percent slopes) (WfB2).—This soil has a thinner surface soil than Wilcox clay loam, level phase. In places where the subsoil material has been mixed into the plow layer by tillage, the plow layer has a reddish cast. In other respects, this soil is similar to the level phase in profile characteristics. Its erosion hazard, however, is more serious than that on the level phase because runoff is more rapid. Included with this soil are a few severely eroded areas and a few areas that have slopes steeper than 3 percent.

This soil has about the same range of uses as the level phase, but it has slightly lower yields. Capability unit A3–VIe–1.

Genesis, Morphology, and Classification of Soils

This section consists of three main parts. The first part discusses the five factors of soil formation and tells how these factors affect the formation of soils in Montgomery County. The second part is a general discussion of the morphology of the soils in the county. In the third part, the soils in the county are placed in the higher categories on the basis of their morphology.

Factors of Soil Formation

Soils are formed as the result of the interaction of climate, living organisms, parent material, topography, and time. These five factors of soil formation act as destructional forces, such as weathering, and as constructional biological forces. The relative importance of each factor differs from place to place, but the kind of soil that forms at any point depends on the effects of these five factors at that point. In extreme instances, one factor may dominate in the formation of soil and be responsible for most of the soil properties. This commonly occurs where the parent materials consist of sand. Quartz sand changes very little during the formation of soil, and only faint horizons develop. Distinct profiles, however, do form in quartz sand under some kinds of vegetation where the water table is high and the topography is low and flat.

Climate

The warm, temperate, almost subtropical climate of Montgomery County is an important factor in the development of soils. The effect of climate continues even after soil development is considerably advanced. Because it is fairly uniform throughout the county, however, climate has not caused differences among soils to the extent that the other factors have caused differences.

A large part of the acreage in the county consists of soils that are strongly weathered, leached, acid, and low in fertility. Very little of the quartz sand, silt, and gravel in the soil horizons is ever reduced to the colloidial state. The fine material is rapidly washed downward from the surface horizon as a result of the relatively high rainfall. Thus, a gray sandy loam surface horizon has developed wherever erosion is not severe.

Compared with other soils developed in this climate, most of the soils in the black belt are immature. The Sumter and Houston clays, for example, are not normal soils for this climate. They contain large quantities of calcium carbonate. They would probably become normal soils if erosion were not continually removing residue from the chalk underlying material and exposing fresh chalk. After a long time, the soils would become acid. Then they would take on some of the characteristics that are typical of mature soils developed in this climate.

Living organisms

Living organisms are largely responsible for the constructional processes of soil development. Grasses and trees add organic matter to the soil material. The grasses generally take in calcium from the lower layers and return it to the surface soil; the amount of bases returned varies according to species of grass. The various species of trees also return varying amounts of bases. For example, the organic remains under pine forests have a much lower content of bases than do those under beech-maple forests.

Shallow-rooted plants, which have most of their roots in the surface soil, tend to reduce leaching in the upper part of the solum more than deep-rooted plants. For this reason, grasses generally lessen leaching more than trees, because the grasses take in more water from the surface soil and leave less to percolate to the lower horizons.

When the early settlers arrived, a dense forest covered the sandy uplands, the acid parts of the prairie section, the stream terraces, and the flood plains. The alkaline parts of the prairie section were covered mainly by grasses and canebrakes. On the sandy uplands and acid prairie were shortleaf pine, loblolly pine, post oak, blackjack oak, hickory, sweetgum, cypress, maple, beech, water oak, cottonwood, ash, hackberry, and sycamore. The alkaline prairie was covered with cane, wild prairie grasses, and some cedar. Some of the differences in native vegetation were mainly the result of differences in drainage; others were mainly the result of differences in the soils.

Organisms that decompose organic matter in the soil influence soil genesis. Different products are the result of different kinds of micro-organisms acting on organic matter and causing its decomposition. If the decomposition is complete, the end products are the same, even though different kinds of micro-organisms acted on the organic material. But the products found in the soil at any one time are largely intermediate compounds. These compounds vary according to the kinds of organisms that are responsible for their presence. The products that result from the growth of fungi are more soluble than those that result from the growth of bacteria. Therefore, conditions that are less favorable for the growth of fungi than for the growth of bacteria may lead to the formation of more organic matter in the soil. This is because the more insoluble products of bac-

terial growth tend to stay in the soil. Among the factors that affect the kind and quantity of micro-organisms in the soil are the kinds of crops, types of fertilization, and conditions of tilth.

As agriculture developed in Montgomery County, man has influenced the development of the soils. He has cleared the forest, cultivated the soils, and drained the land. This activity has affected the development of soils and will continue to do so.

Parent material

The parent materials of the soils in Montgomery County were derived from four geologic formations—the Tuscaloosa, Eutaw, Selma chalk, and the Ripley. In the northern part of the county, the Tuscaloosa and Eutaw formations are overlain by transported materials that form the flood plains and stream terraces. Outcrops of these formations occur only in small isolated areas.

South of the Eutaw formation is the Selma chalk. This formation extends east and west across the entire county in a belt 10 to 12 miles wide. It consists of chalky limestone with small quantities of chalky clay and sand impurities. The formation probably originated from a chalky, more or less muddy ooze that gradually accumulated on the bottom of a clear and only moderately deep sea. Because it has been weathered more readily and uniformly than the sandy Tuscaloosa, Eutaw, or Ripley formations, the Selma chalk lies lower than these formations. A capping of clays forms a mantle of variable thickness on many areas of the formation. This capping is probably a deposit of marine sediments that were transported as alluvium to the sea from the eroded soils to the north.

South of the Selma chalk is the Ripley formation, which underlies about 40 percent of the county. This formation consists of gray to greenish-gray sand and clay that are calcareous and glauconitic in some layers and indurated beds. There are many gradations of sandy clay and clayey sand in the formation.

From east to west the beds of sand and clay of the Ripley formation merge into chalk. Most of the area underlain by the Ripley formation is hilly, and some parts are decidedly rough. Some areas underlain by thick beds of clay are gently sloping. A gently sloping strip of this kind lies along the southern boundary of the Selma chalk formation. Here the underlying strata are chiefly calcareous.

Rather extensive areas of stream terraces occur along the Alabama and Tallapoosa Rivers and the larger creeks. The soils on these terraces have developed from old alluvium. This alluvium has been washed from soils in the Piedmont as well as from soils in Montgomery County. Derived from these materials are soils that differ considerably in their chemical composition and in the consistence and texture of the B horizon.

Along most of the streams are strips of first bottoms that have been flooded from time to time. These first bottoms consist of alluvium that has a mixed lithology because it originated in several areas consisting of different soils. The alluvium has a wide range in texture and in chemical and mineralogical composition as well.

Through the years, the Alabama and Tallapoosa Rivers and other large streams in the county have meandered considerably. The textural pattern that now occurs is the result of the way in which sediments were deposited on flood plains and on areas that are now stream terraces. Normally when the streams flooded, the floodwaters deposited sediments in a regular pattern. Sand and other coarse materials were deposited first, near the stream channel. In many places this coarse material formed natural levees that caused slack-water areas beyond the levees. Finer textured sediments were deposited in these areas beyond the levees. Sometimes during floods, a stream channel changed its course and a slack-water area was formed adjacent to a sandy natural levee. In these areas the texture changes abruptly from silty clay or clay to sand. In some places subsequent floodwaters deposited fine-textured sediments on the sand and caused abrupt vertical changes in the profile.

The parent materials of the soils in Montgomery County may be placed in two broad groups: (1) Transported materials that have been laid down as alluvial deposits of unconsolidated sand, silt, or clay; and (2) residual material that has been weathered from unconsolidated coastal plain material. The transported materials are directly related to the materials from which they were washed. For this reason, some soils on stream terraces and flood plains are similar to soils on the Piedmont. The residual materials are directly related to the underlying material. Since the underlying material varies from place to place, soils formed from it have a wide range in texture, structure, consistence, and color.

Parent material may be exceedingly resistant to change or may be rapidly altered. The heavy, waxy clays are very resistant to the soil-forming processes and retain the characteristics of the parent material for long periods. The sandy parent materials, however, are changed into sandy soils rapidly.

Over a long period, the general effect of the soil-forming processes is to obliterate the differentiating influence of parent material. In time many different soil series may be formed from the same kind of parent material. One may dig 2 or 3 feet in the soils of many different series without finding anything that indicates the kind of parent material from which the soils were formed. The differentiating characteristics of these soils are the result of the effects of living organisms, topography, climate, and time. The effects of parent materials are more important on young and imperfectly drained soils than they are on old ones.

Topography

The topography of Montgomery County ranges from the almost level flood plains and stream terraces in the northern part of the county to the steep hills in the southern part. These steep hills make up Chunnenuggee Ridge, which is a strata ridge. This ridge is highly dissected and has local differences in elevation that range from 75 to 150 feet. Just south of this strata ridge, along the southern boundary of the county, is another strip that is somewhat more hilly than the prairie belt but is less hilly than the strata ridge.

In the central part of the county, or the prairie belt, the topography is almost level to strongly sloping. This prairie belt is divided into the gray prairie in the northern part and the red prairie in the southern part. The

gray prairie is lower in elevation than the red prairie and is more gently sloping.

The highest point in the county, approximately 590 feet above sea level, is in the southwestern corner. The lowest point is about 166 feet above sea level and is just west of Montgomery. The general elevation of the strata ridge is 500 to 600 feet, that of the prairie section around 300 feet; and that of the river flood plains from 100 to 200 feet. The elevation of Montgomery ranges from about 178 to 200 feet. Mount Meigs is 179 feet above sea level, Snowdoun is 291 feet, and Pine Level is 506 feet.

Topography influenced soil formation through its effect on drainage, runoff, and erosion. But along with topography, the parent material was important. For example, most mature, or normal, soil profiles were developed on nearly level to gently sloping topography that had permeable underlying material, whereas soils with heavy textured parent materials on the same relief developed claypans or hardpans.

Soils on steep slopes generally have weak horizon development. This is because of accelerated erosion, reduced percolation of water through the soil, and lack of water that is needed for the vigorous growth of plants that affect soil formation. Steep slopes normally have soils with a very thin solum.

The direction of slope affects local climate. Soils on the south or southwestern slopes warm up faster than those on northern slopes. The northern slopes, however, may retain moisture longer because they are not exposed to the sun so long as are the southern slopes. These differences are only slight in Montgomery County and are of minor importance in the development of soils.

Time

Although time is important in the formation of soils, the effect of time depends on the effect of the parent material, vegetation, climate, and other factors. Some idea of the age of a soil can be obtained by observing the degree of horizon development, or horizonation. It is necessary, however, to evaluate simultaneously the effects of all factors of soil formation to determine the direct effect of any one.

Geologically, most of the soils in Montgomery County are comparatively young. The youngest are the alluvial soils along the streams. These soils are still frequently receiving deposits of sediments and are going through what is called the cumulative soil-forming process. In most places these young soils have very faint development of horizons.

The second youngest soils in the county are on the stream terraces and were developed from old alluvium. Many of these soils show a fairly strong degree of horizon development. Others, which have been influenced strongly by drainage, show weak horizonation except for differences in the A and B horizons.

The upland soils in the prairie section and the sandy soils south of them seem to have developed on geological formations that are about the same age. The soils on the prairie, however, generally have more weakly developed horizons than the acid sandy soils. There are two reasons for this: (1) Limy soils need a longer period for development than acid soils that contain an abundance of quartz sand, and (2) fine-textured parent materials are developed into soils more slowly than coarse-textured materials.

The degree of horizon development of some of the steeper acid sandy soils indicates that these soils are very young, but on these steep soils erosion has kept pace with soil development and a normal profile rarely develops. This lack of horizon development emphasizes the importance of topography in the formation of soils.

Morphology

The soils of Montgomery County vary widely in degree of horizonation. Marked differences in texture occur between the A and B horizons in some profiles and between the B and C horizons in a few profiles. Table 8 shows some of the differences in texture for a few soils in Montgomery County.

Many of the poorly drained soils in the county have weak horizonation. Most of them have had a reduction and transfer of iron. The gray colors in the deeper horizons indicate the reduction of iron oxides. Mottles of yellowish brown, strong brown, or yellowish red occur where the iron has not been completely reduced or removed from the profile. The weak horizons are more common among the younger soils of the stream terraces and first bottoms than among older soils.

The climate for Montgomery County, which is characterized by long warm summers, short mild winters, and a relatively high rainfall, is conducive to rapid chemical reactions and rather intense leaching of the soluble materials. The climate is also conducive to the translocation of less soluble material and colloidal material downward into the B horizon. Because the temperature is moderate to warm and rainfall is heavy, little organic matter accumulates in the soil. The soils in the prairie section that have been in continuous grasses and hay meadows for a number of years, have some organic accumulation in the top 2 or 3 inches.

In some of the forested areas, a thin covering of leaf mold or forest debris is on the surface. In these areas the top 2 or 3 inches of the A horizon contains enough organic matter to impart a dark-gray or brownish-gray color. But in the soils of the county as a whole, the accumulation of organic matter has been of little importance in the forming of different horizons.

Classification by Higher Categories

Soils are placed in broad classes so that the soils on large areas, such as continents, can be studied and compared. In the United States, the soils are placed in six categories in a comprehensive system of classification. The highest category is called a soil order. A soil order is divided in suborders, great soil groups, families, series, and types.[3]

Three soil orders—zonal, intrazonal, and azonal—make up the highest category. Many soil types are in the lower categories. The suborders and families have not been completely worked out and are not used in Montgomery County.

[3] THORP, J., AND SMITH, GUY D. HIGHER CATEGORIES OF SOIL CLASSIFICATION: ORDER, SUBORDER, AND GREAT SOIL GROUPS. Soil Sci. 67: 117–126. 1949.

TABLE 8.—*Mechanical analysis*[1] *of several soils*

Soil	Sample No.	Horizon	Depth	Very coarse sand	Coarse sand	Medium sand	Fine sand	Very fine sand	Silt	Clay
			Inches	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Geiger silty clay	5828	A_p	0–6	0.3	1.2	2.0	4.3	10.6	36.1	45.5
	5829	B_3	15–24	0	.6	1.2	2.5	5.9	27.6	62.2
Waugh fine sandy loam	5830	A_p	0–5	3.3	10.6	9.6	23.1	22.6	25.3	5.5
	5831	B_{31}	17–25	1.7	6.8	5.2	11.3	11.8	27.8	35.4
	5832	B_{32}	25–36	1.6	6.3	5.3	10.5	11.2	25.3	39.8
Wickham silt loam	5833	A_{1p}	0–7	.1	2.7	2.1	3.8	6.0	58.7	26.6
	5834	B_2	7–20	.1	1.1	.7	1.1	2.4	40.5	54.1
Amite fine sandy loam	5835	A_1	0–6	2.1	20.4	12.7	23.3	17.7	17.7	6.1
	5836	B_2	9–42	1.7	14.9	9.1	16.8	11.2	17.9	28.4
Amite fine sandy loam [2]		A_{p1}	0–5	1.27	19.94	15.06	25.09	10.08	16.58	8.48
		B_1	11–23	1.25	12.21	13.51	19.80	6.91	16.27	30.05
		B_{21}	23–51	2.32	10.80	10.65	19.25	6.11	13.17	37.70
Klej loamy fine sand (compact substratum phase)	5837	A_p	0–7	3.5	11.2	18.0	42.2	9.7	13.2	2.2
	5838	C_{12m}	27–34	2.4	10.4	16.8	41.8	9.7	16.4	2.5
	5839	C_b	46–60	2.6	11.8	15.4	29.3	6.2	10.9	23.8
Izagora fine sandy loam	5840	A_p	0–6	.2	1.1	4.9	35.6	28.0	25.7	4.5
	5841	B_2	11–22	.1	.6	2.9	25.4	20.8	24.1	26.1
	5842	C	35–44	.1	.6	2.5	21.6	19.7	17.8	37.7
Houston clay	5845	A_{11}	0–10	.6	1.4	1.1	4.5	2.9	40.1	49.4
	5846	A_{12}	10–28	.4	1.4	1.8	4.6	3.0	39.2	49.6
	5847	AC	28–42	3.4	3.5	1.8	3.2	2.5	31.5	54.1

[1] Analysis by pipette method at the Soil Survey Laboratory, Soil Conservation Service, Beltsville, Md.

[2] From sample taken for S–14 project. Sample was taken at an elevation between 20 and 30 feet higher than that of other areas of Amite fine sandy loam.

In table 9, the 49 soil series of Montgomery County are arranged in soil orders and great soil groups. Listed for each soil series are important factors that have affected the development of the soils—relief, parent material, and drainage. Also given for each series is the degree of profile development.

A profile for each soil series in the county is described in the section, Descriptions of Soils.

Zonal soils

The zonal order consists of soils having well-developed soil characteristics that reflect the influence of the active factors of soil genesis—climate and living organisms, chiefly vegetation—in their formation. The profile of the zonal soils in this county have a relatively eluviated A horizon that is underlain by a finer textured illuviated B horizon. The B horizon, in most places, is uniform in color and well oxidized. The C horizon varies considerably in texture but is generally coarser textured than the B horizon and finer textured than the A horizon. On some of the soils that had a relatively thick A horizon before they were disturbed, accelerated erosion has removed part or all of the original sandy surface soil. The B horizon is exposed and the normal profile truncated.

In this county the zonal soils are in three great soil groups—Red-Yellow Podzolic, Reddish-Brown Lateritic, and Gray-Brown Podzolic.

RED-YELLOW PODZOLIC SOILS

The Red-Yellow Podzolic great soil group consists of well-developed, well-drained acid soils having thin organic (A_0) and organic-mineral (A_1) horizons over a light-colored leached (A_2) horizon. The leached horizon is underlain by a clayey (B) horizon that is red, yellowish red, yellowish brown, or another similar color. Coarse reticulate streaks or mottles of red, yellow, brown, and light gray occur in the deep horizons where parent materials are thick. Parent materials in this county are more or less siliceous.

Red-Yellow Podzolic soils were developed under deciduous, coniferous, or mixed forest in a warm-mesothermal to tropical, humid to perhumid climate. In cultivated areas, the A_0 and A_1 horizons are mixed into the plow layer. In many places erosion has removed all or nearly all of the A horizon, leaving the B horizon exposed. The clay fraction, in most places, is dominated by kaolinite but contains some free ferric oxides or hydroxides and, in places, a relatively small amount of aluminum hydroxide. Hydrous mica and montmorillonite dilute the clay fraction in some of the soils, but this is not typical. In soils having the same kind of parent material, the reticulate streaks generally occur higher in a profile that has a yellowish-brown B horizon than in one with a red B horizon. In a few Red-Yellow Podzolic soils, especially the very sandy ones, the streaked material may be missing. Associated with Red-Yellow Podzolic soils are other well-developed, well-drained red and yellow soils that do not have podzolic morphology.

The Ruston series consists of red members of the Red-Yellow Podzolic great soil group, and the Bowie series consists of yellow members. These soils represent the central concept of the Red-Yellow Podzolic great soil group. Other representative Red-Yellow Podzolic soils are in the Boswell, Cahaba, Oktibbeha, Shubuta, and Wickham series.

Red-Yellow Podzolic soils that grade toward Low-Humic Gley soils are in the Altavista, Augusta, Flint, Izagora, Sawyer, Susquehanna, and Waugh series. These soils are mottled and slightly gleyed in the lower part of their profile.

TABLE 9.—*Classification of the soil series in higher categories and important factors that have contributed to differences in soil morphology*

Great soil group and series	Relief	Parent material	Drainage	Profile development [1]
ZONAL				
Red-Yellow Podzolic soils—				
Central concept:				
Boswell	Nearly level to steep	Acid clay and sandy clay on the Coastal Plain.	Moderately good	Strong.
Bowie	Level to gently sloping	Acid sands and sandy clays on the Coastal Plain.	Moderately good	Medium.
Cahaba	Level to gently sloping	Old alluvium from acid sandy material on the Coastal Plain.	Good	Medium.
Oktibbeha	Nearly level to strongly sloping.	Heavy acid clays over calcareous material	Moderately good	Strong.
Ruston	Very gently sloping to sloping.	Acid sands and sandy clays on the Coastal Plain.	Good	Medium.
Shubuta	Very gently sloping to sloping.	Acid sandy and clayey materials on the Coastal Plain.	Moderately good to good.	Strong.
Wickham	Level to gently sloping	Old alluvium washed mainly from soils on the Piedmont.	Good	Medium.
Grading toward Low-Humic Gley soils:				
Altavista	Level or very gently sloping.	Old alluvium washed from soils on the Piedmont.	Moderately good	Medium.
Augusta	Nearly level	Old alluvium washed mainly from soils on the Piedmont.	Somewhat poor	Medium.
Flint	Level to gently sloping	Old alluvium from acid fine-textured material on the Coastal Plain.	Moderately good	Strong.
Izagora	Level to gently sloping	Old alluvium from acid sandy material on the Coastal Plain.	Moderately good	Strong.
Sawyer	Very gently sloping to sloping.	Acid sandy clays and clays on the Coastal Plain.	Moderately good	Strong.
Susquehanna	Nearly level to sloping	Heavy acid clays and sandy clays on the Coastal Plain materials.	Somewhat poor	Medium.
Waugh	Level to very gently sloping.	Old alluvium from acid sandy material on the Coastal Plain and an admixture washed from the Piedmont.	Moderately good	Medium.
Grading toward Planosols:				
Prentiss	Level to very gently sloping.	Old alluvium from acid sandy materials on the Coastal Plain.	Moderately good	Strong.
Cuthbert	Gently sloping to steep	Acid sandy clay and clay on the Coastal Plain.	Moderately good	Medium.
Reddish-Brown Lateritic soils:				
Amite	Level to strongly sloping	Old alluvium from red soils on the Coastal Plain.	Good	Medium.
Gray-Brown Podzolic soils—				
Grading toward Low-Humic Gley soils:				
Kipling	Level or nearly level	Old alluvium from mixed acid and calcareous clays and acid sandy materials on the Coastal Plain.	Somewhat poor	Medium.
INTRAZONAL				
Low-Humic Gley soils—				
Bibb	Nearly level	Local alluvium from acid materials on the Coastal Plain.	Somewhat poor and poor.	Weak.
Chastain	Level or nearly level	Young alluvium from acid sandy clay on the Coastal Plain.	Poor	Weak.
Geiger	Nearly level	Old alluvium from mixed calcareous and acid clays and acid sandy materials on the Coastal Plain.	Somewhat poor and poor.	Weak.
Myatt	Nearly level	Old alluvium from acid materials on the Coastal Plain.	Poor	Medium.
Rains	Level or nearly level.	Acid sandy loam and sandy clay loam on the Coastal Plain.	Poor	Weak.
Roanoke	Nearly level	Old alluvium washed mainly from Piedmont soils.	Poor	Medium.
Una	Nearly level	Young alluvium from mixed calcareous and acid clays and acid sandy materials on the Coastal Plain.	Poor	Weak.
Wehadkee	Nearly level	Young alluvium washed mainly from soils on the Piedmont.	Poor	Weak.

TABLE 9.—*Classification of the soil series in higher categories and important factors that have contributed to differences in soil morphology*—Continued

INTRAZONAL—Continued

Great soil group and series	Relief	Parent material	Drainage	Profile development [1]
Humic Gley soils—				
Byars	Nearly level	Old alluvium from acid materials on the Coastal Plain.	Poor	Medium.
Grumusols—				
Catalpa	Level or nearly level	Young alluvium from calcareous and acid clays.	Moderately good	Weak.
Eutaw [2]	Nearly level	Heavy acid clays over calcareous materials	Somewhat poor and poor.	Medium.
Houston	Level or nearly level	Residuum from marl and Selma chalk	Moderately good	Weak.
Kaufman	Nearly level	Young alluvium from calcareous and acid clays.	Moderately good	Weak.
Leeper	Level or nearly level	Young alluvium from mixed calcareous clays and acid sandy materials on the Coastal Plain.	Moderately good	Medium.
Vaiden [2]	Level to sloping	Heavy acid clays over calcareous materials	Somewhat poor to moderately good.	Strong.
West Point	Level to very gently sloping.	Local alluvium from calcareous clays	Moderately good to good.	Weak.
Wilcox [2]	Level or nearly level	Acid clays and clay shales from materials on the Coastal Plain.	Somewhat poor to moderately good.	Strong.
Planosols—				
Leaf	Nearly level	Old alluvium from acid sandy clay on the Coastal Plain.	Poor	Medium.
Pheba	Nearly level	Acid sandy and sandy clay materials on the Coastal Plain.	Somewhat poor	Strong.
Stough	Nearly level	Old alluvium from acid sandy materials on the Coastal Plain.	Somewhat poor	Medium.

AZONAL

Alluvial soils—				
Central concept:				
Congaree	Nearly level	Young alluvium washed mainly from soils on the Piedmont.	Good	Weak.
Ochlockonee	Level or nearly level	Young alluvium mainly from acid sandy materials on the Coastal Plain.	Good	Weak.
Grading toward Low-Humic Gley soils:				
Chewacla	Level or nearly level	Young alluvium washed mainly from soils on the Piedmont.	Somewhat poor to moderately good.	Weak.
Iuka	Nearly level	Young alluvium from acid sandy materials on the Coastal Plain.	Moderately good	Weak.
Mantachie	Nearly level	Young alluvium from acid sandy materials on the Coastal Plain.	Somewhat poor	Weak.
Tuscumbia	Nearly level	Young alluvium from mixed calcareous clays and acid sandy materials on the Coastal Plain.	Somewhat poor and poor.	Weak.
Regosols—				
Central concept:				
Huckabee	Nearly level to very gently sloping.	Old alluvium from acid sandy materials on the Coastal Plain.	Excessive	Weak.
Independence	Nearly level to very gently sloping.	Old alluvium from acid sandy materials on the Coastal Plain.	Excessive	Weak.
Lakeland	Nearly level to strongly sloping.	Acid sands and loamy sands on the Coastal Plain.	Excessive	Weak.
Sumter	Nearly level to gently sloping.	Residuum from limestone and Selma chalk	Good	Medium.
Grading toward Low-Humic Gley soils:				
Klej	Nearly level to sloping	Sands and loamy sands on the Coastal Plain.	Moderately good	Weak.

[1] Degree of profile development as indicated by contrast of horizons.

[2] These soils have been placed in the Grumusol great soil group even though they have some features of other great soil groups. They may be found to be more representative of a group other than Grumusols after more information is collected.

The Prentiss series consists of soils that have a fragipan at a depth of about 28 inches. The Prentiss series is in the Red-Yellow Podzolic great soil group but grades toward the Planosols.

The Cuthbert series grades toward the Planosols. In this county, the Cuthbert series has a thinner B_2 horizon than is characteristic of representative Red-Yellow Podzolic soils.

REDDISH-BROWN LATERITIC SOILS

Reddish-Brown Lateritic soils have a dark reddish-brown surface soil, a red, friable sandy clay or sandy clay loam B horizon, and red or reticulately mottled, lateritic parent material. Laterization has dominated in soil development; there was little or no podzolization. The laterization process is apparently a more strictly geological process than one of soil building. The material produced by laterization has a higher than normal content of iron and alumina and a low content of silica. Laterite clays are less sticky than other clays and are lower in their capacity to adsorb bases. The Reddish-Brown Lateritic soils do not have the podzolic morphology, with a light grayish A_2 horizon, that is characteristic of the geographically associated Red-Yellow Podzolic soils that developed from siliceous parent materials.

GRAY-BROWN PODZOLIC SOILS

The Gray-Brown Podzolic soils have a thin, dark A_1 horizon overlying a brownish-gray A_2 horizon that, in many areas, is platy. The A_2 horizon is underlain by a brown to yellowish-brown finer textured B horizon that grades into a lighter colored and commonly coarser textured C horizon.

In Montgomery County, Kipling is the only series in this great soil group. Kipling soils do not have distinct A_1 and A_2 horizons, but the area in which Kipling soils occur has been disturbed through cultivation. Thin A_1 and A_2 horizons probably have been mixed in the plow layer. The C horizon of Kipling soils is finer textured and grayer than is normal for Gray-Brown Podzolic soils. This indicates that Kipling soils grade toward the Low-Humic Gley great soil group.

Intrazonal soils

The intrazonal order consists of soils with genetically related horizons that reflect the dominant influence of a local factor of topography, parent materials, or time over the effects of climate and living organisms.

The intrazonal soils of this county are in the Low-Humic Gley, Humic Gley, Grumusol, and Planosol great soil groups.

LOW-HUMIC GLEY SOILS

Low-Humic Gley soils are somewhat poorly drained to poorly drained. They have a thin surface horizon that is moderately high in organic matter and is underlain by mottled gray and brown gleylike mineral horizons that have little textural differentiation. These soils range in texture from sand to clay and were developed from parent materials that vary widely in physical and chemical properties. A large proportion of these soils range from medium to strongly acid in reaction. Very few are neutral to alkaline.

In this county all the soils in this group are strongly acid except the Una and Geiger soils, which are medium acid. The Low-Humic Gley soils in Montgomery County are the Bibb, Chastain, Myatt, Rains, Roanoke, and Wehadkee.

HUMIC GLEY SOILS

Humic Gley soils are poorly to very poorly drained. They have a thick, dark-colored A_1 horizon that is underlain by a mineral gley horizon. They occur under swamp-forest or herbaceous marsh vegetation. The climate is mostly humid and subhumid. These soils have a high content of organic matter. Most of them are medium acid to mildly alkaline.

Soils in the Byars series have many of these characteristics. They are poorly drained and have a strongly acid surface soil, about 14 inches thick, that is dark gray to very dark gray. Where Byars soils are not cultivated, the surface soil is moderately high in organic matter. The subsoil is a gray fine sandy clay.

GRUMUSOLS

The Grumusols are dominated by montmorillonitic clays. These soils are typically clay in texture and lack eluvial and illuvial horizons. They have a moderate to strong granular structure in the upper horizons. They swell greatly when they are wet and shrink greatly when they are dry. In the process of shrinking and swelling, the soils crack, and materials from upper horizons drop down into lower horizons. Thus, the soils are churned or mixed continually, a process that partly prevents horizon differentiation.

Grumusols may have a prominent A_1 horizon but lack a B horizon that has dominant colors. The colors in the B horizon generally have low chroma. Grumusols are not well drained.

Included with the Grumusols in this county are a few soils that do not have all of the characteristics of the Grumusol great soil group. The Vaiden soils have a B horizon similar to the B horizon of the Red-Yellow Podzolic soils in color. The Vaiden fine sandy loams apparently have eluviated and illuviated horizons. These soils, however, are thought to contain pseudo horizons and may not have gone through any appreciable degree of podzolization. Soils in the Eutaw series show some effect of gleying and are more poorly drained than typical Grumusols, but they are not too wet to be churned and mixed. The Houston series is representative of Grumusols. Other Grumusols are in the Catalpa, Kaufman, Leeper, West Point, and Wilcox series.

PLANOSOLS

Planosols have at least one layer of cementation or high clay content that is abruptly separated from an adjacent, sharply contrasting layer. In many places the cemented or compacted horizon lies beneath a moderately well developed or well developed B horizon that has a higher percentage of clay than is in the A horizon.

The Leaf soils have a subsoil high in clay, but the other soils of the Planosol great soil group in Montgomery County have fragipans. Fragipans are very compact horizons, rich in silt, sand, or both, but commonly relatively low in clay. These fragipans commonly interfere with water and root penetration. They are in soils developed from both residual and transported parent material. The Pheba series is representative of the Planosol great soil group. Other series in this great soil group are the Leaf and the Stough.

Azonal soils

The azonal order consists of soils that lack distinct genetically related horizons, commonly because of youth, resistant parent material, or steep topography. The azonal soils of the county are in the Alluvial and Regosol great soil groups.

ALLUVIAL SOILS

Alluvial soils have developed from transported material that has been deposited relatively recently and has been modified little, if any, by the soil-forming processes. This transported and deposited material is called alluvium. All first-bottom soils in the Alluvial great soil group are susceptible to periodic overflow by streams. New material is deposited by floodwaters before the soils have time to form genetically related horizons. Differences in parent material and degree of drainage are the chief features that differentiate these soils.

The Congaree and Ochlockonee series are representative of the Alluvial soils. Both series consist of well-drained soils. The Congaree soils have formed from materials washed mainly from soils underlain by granite, gneiss, and schist. The Ochlockonee soils have formed from materials washed from soils on the sandy uplands of the Coastal Plain.

Soils in the Chewacla, Iuka, Mantachie, and Tuscumbia series also are Alluvial soils, but they grade toward the Low-Humic Gley great soil group. Their profiles are mottled and slightly gleyed in the lower part.

REGOSOLS

The soils of the Regosol great soil group were developed from deep, unconsolidated rock or soft rocky deposits and have few, if any, distinct soil characteristics.

Soils in the Lakeland, Huckabee, and Independence series are representative of the Regosol great soil group. These soils have formed in thick beds of acid sandy materials on the Coastal Plain. The Sumter soils have formed in residuum from limestone and Selma chalk and are also representative Regosols.

The Klej series consists of soils that are not so well drained as the Lakeland, Huckabee, and Independence soils. It grades toward the Low-Humic Gley great soil group. Klej soils have moderately good drainage and mottlings in the lower part of the profile.

Glossary

Acidity. The degree of acidity of the soil mass expressed in pH values, or in words, as follows:

	pH
Extremely acid	below 4.5
Very strongly acid	4.5–5.0
Strongly acid	5.1–5.5
Medium acid	5.6–6.0
Slightly acid	6.1–6.5
Neutral	6.6–7.3
Mildly alkaline	7.4–7.8
Moderately alkaline	7.9–8.4

Aeration, soil. The exchange of air in soil with air from the atmosphere. The composition of the air in a well-aerated soil is similar to that in the atmosphere; in a poorly aerated soil, the air in the soil is considerably higher in carbon dioxide than the atmosphere and lower in oxygen.

Aggregate, soil. Many fine soil particles held in a single mass or cluster, such as a clod, crumb, block, or prism. Many properties of the aggregate differ from those of an equal mass of unaggregated soil.

Alluvial soils. An azonal group of soils developed from transported and relatively recently deposited material (alluvium) and characterized by weak or no modification of the original materials by soil-forming processes.

Alluvium. Fine material, such as sand, silt, or clay deposited on land by streams.

Available nutrient in soils. The part of the supply of a plant nutrient in the soil that can be taken up by plants at rates and in amounts significant to plant growth.

Available water in soils. The part of the water in the soil that can be taken up by plants at rates significant to their growth; usable; obtainable. In this report, the term commonly used is "available moisture."

Azonal soils. A general group of soils having little or no development of the soil profile. Most of them are young. The azonal soils in Montgomery County are Alluvial soils and Regosols.

Catena. A group of soils, within a specific soil zone, formed from similar parent materials but having unlike soil characteristics that are the result of differences in relief or drainage.

Clay. The small mineral soil grains less than 0.002 millimeters (0.000079 inch) in diameter. The term "clay" also applies to soil that contains 40 percent or more of clay, less than 45 percent of sand, and less than 40 percent of silt.

Clay loam. Soil material that contains 27 to 40 percent of clay and 20 to 45 percent of sand.

Colluvium. Mixed deposits of soil material and rock fragments near the base of rather steep slopes. The deposits have accumulated through soil creep, slides, and local wash.

Complex, soil. A mapping unit, used on detailed soil surveys, which consists of two or more recognized soils, or taxonomic units. These soils may be similar or contrasting, but they occur together in a more or less regular pattern and are so intimately associated geographically that they cannot be separated by boundaries on a map of the scale used. An example in this county is Shubuta-Cuthbert complex, eroded, 12 to 30 percent slopes.

Concretions. Hard grains, pellets, or nodules that consist of concentrations of compounds in the soil. The composition of some concretions is unlike that of the surrounding soil.

Consistence. The degree of cohesion and adhesion of soil particles or their resistance to separation or deformation of the soil aggregate. Terms commonly used to describe consistence are *brittle, compact, firm, friable, soft, hard, plastic,* and *sticky.*

Brittle—Soil breaks with a sharp, clean fracture; if struck with a sharp blow, it shatters in cleanly broken, hard fragments.

Compact—Dense and firm but without cementation.

Firm—Consistence of moist soil; soil material crushes with moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Friable—Consistence of moist soil; soil material crushes easily between thumb and forefinger and coheres when pressed together.

Soft—Consistence of dry soil; soil material is very weakly coherent and fragile and breaks to powder or individual grain under very slight pressure.

Hard—Consistence of dry soil; soil material is moderately resistant to pressure, can be broken in hands without difficulty, but is barely breakable between thumb and forefinger.

Plastic—Consistence of wet soil; soil material becomes wirelike when rolled in the hands and can be deformed under moderate pressure.

Sticky—Consistence of wet soil; after pressure, soil material adheres to both thumb and forefinger and tends to stretch.

Contour tillage. Furrows plowed at right angles to the direction of slope, at the same level throughout, and ordinarily at comparatively close intervals.

Cropland. Land regularly used for crops, except forest crops. It includes rotation pasture, cultivated summer fallow, or other land ordinarily used for crops but temporarily idle.

Drainage. (1) The rapidity and extent of the removal of water from the soil by runoff and by flow through the soil to underground spaces. (2) As a condition of the soil, the frequency and duration of periods when the soil is free of saturation. For example, in well-drained soils, the water is removed readily, but not rapidly; in poorly drained soils, the root zone is waterlogged for long periods and the roots of ordinary crop plants cannot get enough oxygen; in excessively

drained soils, the water is removed so completely that most crop plants suffer from lack of water.

Drainage, artificial. The removal of excess surface water or excess water from within the soil by surface or subsurface drains.

Erosion, soil. The wearing away or removal of soil material by water or wind.

Fertility, soil. The quality of a soil that enables it to provide compounds, in adequate amounts and in proper balance, for the growth of specified plants, when other factors such as light, moisture, temperature, and the physical condition of a soil are favorable.

Fine-textured soil. Roughly, clayey soil containing 35 percent or more of clay.

First bottom. The normal flood plain of a stream, part of which may be flooded only at infrequent intervals; land along a stream that is subject to overflow.

Flood plain. The nearly flat land along streams that overflow during floods.

Forest. Land not in farms that bears a stand of trees of any age or stature, including seedlings (reproduction), but of species that have a minimum average height of 6 feet at maturity; or land from which such a stand has been removed but is not now restocking and on which no other use has been substituted. On farms, land in trees is called farm woodland or farm forest.

Fragipan. A compact horizon high in silt, sand, or both, and generally relatively low in clay. Hardness in a fragipan is a result of density or compaction rather than of cementation or a high content of clay. Removed fragments are friable, but the material in place is so dense that roots cannot penetrate and water moves through it very slowly.

Genesis, soil. Mode of origin of the soil, with special reference to the processes responsible for the development of the solum (horizons A and B) from the unconsolidated parent material.

Gley soil. A soil horizon in which waterlogging and lack of oxygen have caused the material to be a neutral gray in color. The term "gleyed" is applied, as in "moderately gleyed soil," to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Great soil group. A broad group of soils having fundamental characteristics in common. Examples in this county are Red-Yellow Podzolic, Planosol, and Alluvial.

Ground water. Water that fills all the unblocked pores of underlying material below the water table, which is the upper limit of saturation.

Hardpan. A hardened or cemented soil horizon or layer. The soil material may be sandy or clayey and may be cemented by iron oxide, silica, calcium carbonate, or other substances.

Heavy soil. An old term formerly used for clayey or fine-textured soils. The term originated from the heavy draught on the horses when plowing.

Horizon, soil. A layer of soil, approximately parallel to the soil surface, with characteristics produced by the soil-forming processes.

Horizon A—The upper horizon of the soil mass from which material has been removed by percolating water; the eluviated part of the solum; the surface soil. This horizon is generally subdivided into two or more subhorizons, of which the A_p horizon is not a part of the mineral soil but is the accumulation of organic debris on the surface. Other subhorizons are designated as A_1, A_2, and so on.

Horizon B—The horizon of deposition to which materials have been added by percolating water; the illuviated part of the solum; the subsoil. This horizon may be divided into several subhorizons, according to the color, structure, consistence, or character of the material deposited. These layers are designated as B_1, B_2, B_3, and so on.

Horizon C The horizon of partly weathered material underlying the B horizons; the substratum; usually the parent material.

Horizon D—Any substratum underneath the soil, such as hard rock or layers of clay and sand, that is not parent material but which may have significance to the overlying soil.

Horizon boundaries. The characteristic widths of boundaries between soil horizons may be described as (1) *abrupt*, if less than 1 inch wide; (2) *clear*, if about 1 to 2½ inches wide; (3) *gradual*, if 2½ to 5 inches wide; and (4) *diffuse*, if more than 5 inches wide. The topography of a boundary is expressed in relation to a horizontal plane as (1) *smooth*, if nearly a plane; (2) *wavy*, if pockets are wider than their depth; (3) *irregular*, if pockets are deeper than their width; (4) *broken*, if parts of the horizon are unconnected with other parts. Example, *gradual, wavy* boundary.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to water and air all the time.

Internal drainage. Movement of water through the soil. The rate of movement is affected by the texture of the surface soil and subsoil, and by the height of the water table. Relative terms for expressing internal drainage are *very rapid, rapid, medium, slow, very slow,* and *none.*

Landscape. All the characteristics that distinguish an area and give it a pattern that contrasts with the pattern of other areas. Any one kind of soil is said to have a characteristic natural landscape, and, under different uses, it has one or more characteristic cultural landscapes.

Layer, gley. Layer of intense reduction characterized by the presence of ferrous iron and by neutral gray colors that commonly change to brown upon exposure to the air. Layer designated by the use of the letter "g" after the horizon designations B or C.

Layer, indurated. A layer designated by the symbol "m" (massive), that is indurated to a greater degree than a horizon having only the principal designation of the horizon given. Composed of materials containing silicate materials, such as those in fragipans.

Leaching, soil. Removal of materials in solution by the passage of water through soil.

Light soil. An old term formerly used for sandy or coarse-textured soils.

Marl. An earthy deposit consisting mainly of calcium carbonate that is commonly mixed with clay or other impurities. Marl is formed chiefly at the margins of fresh-water lakes. It is commonly used for liming acid soils.

Mature soil. Any soil with well-developed soil horizons that is in near equilibrium with its present environment.

Morphology, soil. The physical constitution of the soil expressed in the kinds of horizons, their thickness and arrangement in the profile, and the texture, structure, consistence, porosity, and color of each horizon.

Mottles, soil. Contrasting color patches that vary in number and size. Descriptive terms are: Contrast—*faint, distinct,* and *prominent;* abundance—*few, common,* and *many;* and size—*fine, medium,* and *coarse.* The size measurements are: *Fine,* commonly less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* commonly ranging between 5 and 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* commonly more than 15 millimeters (about 0.9 inch) in diameter along the greatest dimension.

Nutrients, plant. The elements taken in by a plant that are essential to its growth and are used by the plant in the elaboration of its food and tissue.

Parent material. The unconsolidated mass of rock material or peat from which the soil profile develops. (See also C horizon, Profile, and Substratum.)

Permeability, soil. That quality of a soil that enables water or air to move through the soil.

Phase, soil. A subdivision of the soil type that is made generally because of differences in relief, stoniness, accelerated erosion, or other external characteristics.

Planosol. An intrazonal group of soils that have an eluviated surface horizon underlain by claypans or fragipans. These soils developed on nearly level or gently sloping uplands in humid or subhumid climates.

Productivity, soil. The capability of a soil to produce a specified plant or sequence of plants under a given system of management.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material. (See also Horizon, Soil, and Parent material.)

Regosol. An azonal group of soils that includes those without definite genetic horizons that are developing from deep, unconsolidated or soft, rocky deposits.

Relief. The elevations or inequalities of a land surface, considered collectively.

Sand. Small rock or mineral fragments having diameters ranging from 0.05 millimeter (0.002 inch) to 2.0 millimeters (0.079 inch). The term "sand" is also applied to soils containing 85 percent or more of sand.

Sandy clay. Soil that contains 35 percent or more of clay and 45 percent or more of sand.

Sandy clay loam. Soil that contains 20 to 35 percent clay, less than 28 percent silt, and 45 percent or more of sand.

Series, soil. A group of soils, formed from a particular type of parent material, that have soil horizons similar in their differentiating characteristics and in arrangement of the soil profile, except for the texture of the surface soil. Examples of soil series in Montgomery County are Amite, Boswell, and Vaiden.

Silt. Individual mineral particles of soil that range from 0.05 millimeter (0.002 inch) to 0.002 millimeter (0.000079 inch) in diameter. As a textural class, a silt contains 80 percent or more of silt and less than 12 percent of clay. Sediments deposited from water in which the individual grains are approximately of the size of silt are also called silt, although the term is sometimes applied loosely to sediments containing considerable sand and clay.

Silt loam. Soil having 50 percent or more of silt and 12 to 27 percent of clay or 50 to 80 percent of silt and less than 12 percent of clay.

Silty clay. Soil having 40 percent or more of clay and 40 percent or more of silt.

Silty clay loam. Soil having 27 to 40 percent of clay and less than 20 percent of sand.

Slope. The incline of the surface of a soil. Slope is usually expressed in percent of slope, which equals the number of feet of fall per 100 feet of horizontal distance.

Soil. The natural medium for the growth of land plants; a dynamic body on the surface of the earth, in which plants grow, that is composed of mineral and organic materials and living forms.

Soil depth. Depth of material which plant roots can penetrate readily, and which supplies nutrients and water. In this report, descriptive terms and their equivalent depth are *deep*, 36 inches or more; *moderately deep*, 20 to 36 inches; *shallow*, 10 to 20 inches; and *very shallow*, less than 10 inches.

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soils includes the A and B horizons. In most places the characteristics of the material in these horizons are quite unlike those of the underlying parent material. (See also Horizon, A and B).

Stratified. Composed of, or arranged in, strata, or layers, such as those in stratified alluvium. The term is confined to geological materials. Layers in soils that result from the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Structure, soil. The aggregates in which individual soil particles are arranged. It may refer to their natural arrangement in the soil when in place or when disturbed. Soil structure is classified according to grade, class, and type.

Grade—Degree of distinctiveness of aggregation; expresses the differential between cohesion within aggregates and adhesion between aggregates. Terms: *Structureless* (single grain or massive), *weak*, *moderate*, and *strong*.

Class—Size of soil aggregates. Terms: *Fine*, *medium*, and coarse.

Type—Shape of soil aggregates. Terms: *Platy*, *prismatic*, *columnar*, *angular blocky*, *subangular blocky*, *granular* (nonporous), and *crumb* (very porous).

Subsoil. Technically, the B horizon; commonly, that part of the profile below plow depth.

Substratum. Material underlying the subsoil. (See also Horizon C, and Parent material).

Surface runoff (or runoff). Relative rate at which water is removed by flowing over the surface of the soil. The amount and rapidity of runoff are affected by the texture, structure, and porosity of the surface soil; by the vegetative cover; by prevailing climate; and by slope. The terms used to express the relative degree of runoff are *very rapid*, *rapid*, *medium*, *slow*, *very slow*, and *ponded*.

Surface soil. Technically, the A horizon; commonly, that part of the upper profile that is normally stirred by plowing.

Terrace (geologic). Old alluvial plain, usually level or smooth, bordering a stream; seldom subject to overflow. A terrace is sometimes called a second bottom.

Texture, soil. Relative proportions of the various size groups of soil grains in a mass of soil; the proportion of clay, silt, and sand. A coarse-textured soil is one high in sand; a fine-textured soil has a large proportion of clay.

Tilth, soil. The physical condition of a soil in respect to its fitness for the growth of a specified plant or sequence of plants.

Type, soil. A subdivision of the soil series based on texture of the surface soil.

Upland (geologic). Land consisting of materials unworked by water in recent geologic time and lying, in general, at elevations higher than the alluvial plain or stream terraces.

Water table. The upper limit of the part of the soil or underlying rock material that is wholly saturated with water. In some places an upper, or perched, water table may be separated from a lower one by a dry zone.

Water-holding capacity. The capacity of soil to hold water. The moisture-holding capacity of sandy soils is generally low; that of clayey soils is high, but some clayey soils hold the water tightly and do not give it up readily to plants.

SOIL SERIES OF MONTGOMERY COUNTY, ALABAMA:

Soil series [1]	Color		Texture		Structure	Consistency of subsoil [2]			Nature of parent material
	Surface soil [3]	Subsoil	Surface soil	Subsoil [2]	Subsoil [2]	Dry	Moist	Wet	
Altavista	Light brownish gray to light olive brown.	Yellowish brown to light yellowish brown.	Very fine sandy loam.	Silty clay loam to fine sandy clay loam.	Moderate, fine to medium, subangular blocky.	Hard	Friable	Slightly sticky.	Old alluvium from granite, gneiss, and schist on Piedmont.
Amite	Dark brown to dark reddish brown.	Dark red to red.	Fine sandy loam and sandy clay loam.	Sandy clay loam and sandy clay.	Weak, fine to medium, subangular blocky.	Slightly hard.	Friable to very friable.	Sticky	Old alluvium from acid sandy soils.
Augusta	Very dark grayish brown.	Light olive brown, mottled.	Silt loam or fine sandy loam.	Silty clay or silty clay loam.	Very weak to weak, fine subangular blocky.	Hard	Firm	Slightly sticky.	Old alluvium from Piedmont with some Coastal Plain material.
Bibb	Dark gray.	Gray, mottled.	Fine sandy loam to silt loam.	Sandy clay loam to silty clay loam.	Very weak, medium, subangular blocky.	Slightly hard.	Very friable.	Slightly sticky.	Local alluvium from Coastal Plain soils.
Boswell	Grayish brown to dark brown.	Red to dark red.	Fine sandy loam and clay loam.	Fine sandy clay to clay.	Moderate, fine, subangular blocky.	Hard	Firm	Sticky	Beds of clays and sandy clays.
Bowie	Grayish brown.	Yellowish brown.	Fine sandy loam.	Sandy clay loam.	Weak, fine, subangular blocky.	Slightly hard.	Friable	Slightly sticky.	Unconsolidated sands and sandy clays.
Bowie (thin solum).	Grayish brown.	Brownish yellow.	Fine sandy loam.	Fine sandy clay loam.	Very weak, medium, subangular blocky.	Hard in lower part.	Friable	Slightly sticky.	Unconsolidated sands and sandy clays.
Byars and Myatt.	Very dark gray to dark grayish brown.	Gray, mottled.	Fine sandy loam.	Sandy clay loam to fine sandy clay.	Weak, medium, subangular blocky to massive.	Hard	Firm	Plastic	Old alluvium
Cahaba	Dark grayish brown to pale brown.	Dark brown to yellowish red.	Fine sandy loam.	Sandy clay loam.	Weak, medium, subangular blocky.	Friable	Friable	Nonsticky	Old alluvium from acid sandy soils.
Catalpa	Dark olive gray.	Very dark grayish brown.	Clay	Clay	Weak, medium granular.	Hard	Firm	Very plastic.	Alluvium—mostly from alkaline soils.
Chastain	Very dark brown.	Intensely mottled olive brown, gray, and very dark grayish brown.	Very fine sandy clay loam.	Fine sandy clay.	Massive	Hard	Firm	Very sticky.	Old alluvium from acid soils of the Coastal Plain.

See footnotes at end of table.

SUMMARY OF IMPORTANT CHARACTERISTICS

Soil depth	Dominant slope range	Internal drainage	Runoff	Permeability of subsoil	Erosion hazard	Moisture relations [4]	Natural fertility	Reaction	Physiographic position	Principal uses [5]
Deep	*Percent* 0–2	Moderately good.	Moderate	Moderately slow.	Low to moderate.	Good	Low	Strongly acid.	Stream terrace.	Corn, cotton, hay, pasture, and oats.
Deep	2–5	Good	Moderately rapid.	Moderate to moderately rapid.	Moderate to high.	Good	Moderately high to medium.	Medium acid to strongly acid.	Stream terrace.	Cotton, corn, hay, pasture, and small grain.
Moderately deep.	0–2	Somewhat poor.	Moderate to slow.	Moderately slow to slow.	Low	Poor	Moderately low.	Strongly acid.	Stream terrace.	Pasture, trees, and hay.
Deep	0–2	Somewhat poor to poor.	Very slow	Slow	None	Fair to poor.	Low to medium.	Strongly acid.	On local alluvium in upland.	Pasture, truck crops, and corn.
Deep	2–10	Moderately good.	Moderately slow.	Slow	High	Fair to good.	Low	Strongly acid.	Upland	Pasture, trees, corn, hay crops, and cotton.
Moderately deep.	1–8	Moderately good.	Rapid	Moderately rapid.	Moderately high.	Good	Low	Strongly acid.	Upland	Cotton, corn, peanuts, hay crops, oats, and pasture.
Shallow	2–5	Moderately good.	Rapid	Moderately rapid to 20 inches, very slow below 20 inches.	Moderately high.	Fair	Low	Strongly acid.	Upland	Cotton, corn, pasture, hay crops, oats, and peanuts.
Moderately deep to deep.	0–1	Poor	Very slow	Moderately slow to slow.	None	Poor	Low	Strongly acid.	Stream terrace.	Trees, pasture, and sugarcane.
Deep	1–5	Good	Moderately rapid.	Moderately rapid.	Low	Very good.	Low	Strongly acid.	Stream terrace.	Cotton, corn, small grain, and hay crops.
Deep	0–1	Moderately good.	Moderately slow.	Moderately slow.	None (overflows).	Good	Moderately high.	Medium alkaline.	Flood plains in Prairie section.	Pasture, hay, and corn.
Deep	0–1	Poor	Very slow	Moderately slow.	None (overflows).	Fair	Moderately low.	Strongly acid.	First bottoms along streams.	Pasture, hay, and corn.

SOIL SERIES OF MONTGOMERY COUNTY, ALABAMA:

Soil series [1]	Color		Texture		Structure	Consistency of Subsoil [2]			Nature of parent material
	Surface soil [3]	Subsoil	Surface soil	Subsoil [2]	Subsoil [2]	Dry	Moist	Wet	
Chewacla	Brown	Gray, mottled.	Silt loam	Silty clay loam.	Structureless	Hard	Friable	Slightly sticky.	Recent alluvium mainly from Piedmont (granite, gneiss, and schist).
Congaree	Brown to dark grayish brown.	Dark brown to yellowish brown.	Silt loam and fine sandy loam.	Silt loam to silty clay loam.	Massive	Hard	Friable	Slightly sticky.	Recent alluvium from Piedmont and Coastal Plain (granite, gneiss, and schist).
Cuthbert	Grayish brown.	Reddish brown.	Fine sandy loam.	Fine sandy clay.	Moderate, medium, subangular blocky.	Very hard	Firm	Plastic	Thick beds of clays and sandy clays.
Eutaw	Very dark grayish brown.	Intensely mottled gray.	Clay and fine sandy loam.	Clay	Weak, medium, subangular blocky to massive (structureless).	Very hard	Firm	Very plastic.	Thick beds of heavy acid clays over Selma chalk.
Flint	Light brownish gray.	Yellowish red.	Fine sandy loam.	Fine sandy clay to clay.	Moderate, medium, subangular blocky.	Very hard	Firm	Sticky	Old alluvium from acid sandy clay soils.
Geiger	Dark grayish brown to very dark gray.	Gray, mottled yellowish brown, strong brown, and dark brown.	Silty clay	Clay	Weak, fine, subangular blocky.	Hard to very hard.	Firm	Very plastic.	Old alluvium from Prairie section and other parts of Coastal Plain.
Geiger, overwash variant.	Very dark gray.	Mottled yellowish brown, light olive brown, and gray.	Silty clay	Silty clay	Massive	Hard	Firm	Very plastic.	Local alluvium from calcareous soils.
Gullied land, acid materials.	Variable	Variable	Sandy loams to clays.	Sandy clay loams to clays.	Variable	Variable	Variable	Very plastic.	Acid material.
Gullied land, calcareous materials.	Variable	Variable	Clays	Clays	Variable	Hard	Firm	Variable	Selma chalk
Houston	Dark gray to very dark gray.	Light olive gray.	Clay	Clay	Weak, medium granular to weak, fine subangular blocky.	Hard to very hard.	Firm	Very plastic.	Selma chalk or marl.
Huckabee	Gray to grayish brown.	Light yellowish brown.	Loamy sand.	Loamy sand.	Structureless	Loose	Nearly loose.	Very friable.	Old alluvium from sandy soils.

See footnotes at end of table.

SUMMARY OF IMPORTANT CHARACTERISTICS—Continued

Soil depth	Dominant slope range	Internal drainage	Runoff	Permeability of subsoil	Erosion hazard	Moisture relations [4]	Natural fertility	Reaction	Physiographic position	Principal uses [5]
	Percent									
Deep	0–1	Somewhat poor to moderately good.	Moderately slow.	Moderate	None (overflows).	Very good.	Moderately high.	Strongly acid.	Flood plains.	Pasture, corn, and hay.
Deep	0–1	Good	Moderate	Moderate	None (overflows).	Very good.	High	Strongly acid.	Flood plains.	Corn, pasture, and hay.
Shallow	5–20	Moderately good.	Very rapid.	Slow	High	Fair	Low	Strongly acid.	Upland	Trees and pasture.
Moderately deep to deep.	0–2	Somewhat poor to poor.	Slow	Slow to very slow.	Very low	Fair	Moderately low.	Strongly acid.	Acid prairie upland.	Pasture and hay.
Moderately deep.	0–5	Moderately good.	Moderate	Moderately slow.	Moderate	Good	Low	Strongly acid.	Stream terrace.	Corn, cotton, pasture, oats, and trees.
Moderately deep to deep.	0–2	Somewhat poor.	Slow	Very slow	Low	Poor	Low	Medium acid to strongly acid.	Stream terrace in the Prairie section.	Pasture, hay crops, and trees.
Moderately deep to deep.	0–2	Somewhat poor.	Slow	Very slow	None	Fair	Medium to moderately high.	Calcareous upper part. Medium acid lower part.	Local alluvium in Prairie section.	Pasture, hay crops, and corn.
Moderately deep to deep.	3–20	Moderately good to good.	Very rapid.	Slow	Very high	Fair	Low	Moderate to strongly acid.	Upland	Forest.
Shallow to deep.	3–15	Moderately good to good.	Very rapid.	Moderate to slow.	High	Poor	Low	Moderately alkaline.	Variable	Pasture.
Deep	2–4	Moderately good.	[6]	Moderately slow.	Moderate	Good	Medium to moderately high.	Moderately alkaline.	Variable. Upland in Prairie section.	Pasture, hay, and corn.
Deep	0–5	Excessive	Rapid	Very rapid.	Very low	Fair	Very low	Strongly acid.	Stream terrace.	Corn, pasture, and truck crops

SOIL SERIES OF MONTGOMERY COUNTY, ALABAMA:

Soil series [1]	Color		Texture		Structure	Consistency of Subsoil [2]			Nature of parent material
	Surface soil [3]	Subsoil	Surface soil	Subsoil [2]	Subsoil [2]	Dry	Moist	Wet	
Independence	Grayish brown to very dark grayish brown.	Strong brown and yellowish red.	Loamy sand.	Loamy sand.	Single grain	Loose	Very friable.	Nonsticky.	Old alluvium from sandy soils.
Iuka soils	Dark grayish brown.	Grayish brown.	Silt loam	Silt loam	Very weak, massive to structureless.	Slightly hard.	Friable	Slightly sticky.	General alluvium.
Iuka soils (local alluvium).	Reddish brown.	Dark grayish brown, mottled.	Silt loam.	Silty clay loam.	Structureless	Hard	Firm	Slightly sticky.	Local alluvium from Coastal Plain soils.
Izagora	Grayish brown.	Yellowish brown to light olive brown.	Very fine to fine sandy loam.	Fine sandy clay loam.	Weak, medium, subangular blocky.	Slightly hard.	Friable	Slightly sticky.	Old alluvium from acid clay loams and sandy clay loams.
Kaufman	Very dark grayish brown.	Dark olive gray.	Clay loam.	Silty clay	Structureless	Very hard.	Firm	Very plastic.	Recent alluvium from acid and alkaline soils in the Prairie section.
Kipling	Grayish brown.	Light yellowish brown, mottled.	Very fine sandy loam.	Fine sandy clay.	Weak, medium, subangular blocky.	Hard	Firm	Plastic	Old alluvium from acid and alkaline materials.
Klej	Very dark grayish brown.	Light yellowish brown.	Loamy fine sand.	Loamy fine sand.	Structureless	Loose	Loose	Nonsticky	Thin beds of sand and loamy sands.
Lakeland	Light brownish gray.	Pale olive to pale yellow.	Loamy fine sand.	Loamy fine sand.	Single grain	Loose	Very friable.	Very friable.	Thick beds of sand and loamy sand.
Leaf	Dark gray.	Gray, mottled.	Fine sandy loam.	Fine sandy clay.	Weak, fine, subangular blocky.	Hard	Firm	Plastic	Old alluvium from acid sandy clays.
Leeper	Very dark gray to almost black.	Very dark gray, to dark brown mottled at 20 inches.	Silty clay.	Silty clay	Weak, medium granular.	Slightly hard.	Firm	Plastic	Mixed alluvium from calcareous prairie soils and acid Coastal Plain soils.
Mantachie	Very dark gray to very dark brown.	Mottled dark gray and very dark grayish brown.	Silt loam or sandy loam.	Silt loam to sandy clay loam.	Weak, coarse, granular.	Slightly hard.	Friable	Slightly sticky.	Alluvium from Coastal Plain soils.
Mixed alluvial land.	Dark grayish brown to black.	Mottled dark gray to olive gray.	Loam to clay.	Loam, silty clay, and clay.	Variable	Hard	Firm	Very plastic.	Alluvium, mostly from alkaline soils.
Mixed local alluvial land.	Grayish brown to dark brown.	Mottled	Variable	Clays to silty clays.	Variable	Hard	Firm to friable.	Plastic	Local alluvium from mixed prairie.

See footnotes at end of table.

SUMMARY OF IMPORTANT CHARACTERISTICS Continued

Soil depth	Dominant slope range	Internal drainage	Runoff	Permeability of subsoil	Erosion hazard	Moisture relations [4]	Natural fertility	Reaction	Physiographic position	Principal uses [5]
Deep	*Percent* 0–5	Excessive	Rapid	Very rapid.	Very low	Fair	Very low	Strongly acid.	Stream terrace.	Corn, pasture, and truck crops.
Deep	0–2	Moderately good.	Moderate	Moderately rapid.	None (overflows).	Very good.	Moderately high.	Strongly acid.	Flood plains.	Pasture, corn, and hay.
Deep	0–2	Moderately good.	Slow	Moderately rapid.	None	Good	High	Strongly acid.	Local alluvium in Upland.	Corn, hay, sugarcane, and pasture.
Moderately deep.	0–3	Moderately good.	Moderately slow.	Moderate in upper, slow in lower.	Low	Fair	Low	Strongly acid.	Stream terrace.	Pasture, corn, hay, and cotton.
Deep	0–1	Moderately good.	Moderately slow.	Moderately slow.	None (overflows).	Good	Moderately high.	Neutral to slightly acid.	Flood plains in Prairie section.	Pasture and hay.
Deep	0–2	Somewhat poor.	Moderate	Slow	Low	Good	Low to medium.	Medium acid.	Stream terrace in Prairie section.	Pasture, hay, corn, and cotton.
Moderately deep.	1–4	Moderately good.	Rapid	Very rapid to 30 inches.	Low	Fair	Low	Strongly acid.	Upland	Corn, pasture, and peanuts.
Deep	1–10	Excessive	Slow	Very rapid.	Low	Poor	Low	Strongly acid.	Upland	Corn, peanuts, pasture, and cotton.
Moderately deep.	0–2	Poor	Very slow	Moderately slow.	Low	Fair to poor.	Low	Strongly acid.	Stream terrace.	Pasture, hay, corn, and forest.
Moderately deep to deep.	0–1	Moderately good.	Slow	Slow	None (overflows).	Good	Medium to high.	Neutral to calcareous.	Flood plains in Prairie section.	Pasture and hay.
Moderately deep.	0–1	Somewhat poor.	Slow	Moderately slow.	None (overflows).	Fair	Medium to high.	Strongly acid.	Flood plains.	Trees, pasture, corn, and sugarcane.
Deep	0–1	Moderately good to somewhat poor.	Slow	Moderately slow.	None (overflows).	Very good.	Medium	Mildly alkaline to slightly acid.	Prairie flood plains.	Pasture and hay.
Deep	0–2	Somewhat poor to poor.	Slow	Moderately slow.	None	Good	Medium	Neutral to strongly acid.	Local alluvium, prairie upland.	Pasture and hay.

SOIL SERIES OF MONTGOMERY COUNTY, ALABAMA:

Soil series [1]	Color		Texture		Structure	Consistency of Subsoil [2]			Nature of parent material
	Surface soil [3]	Subsoil	Surface soil	Subsoil [2]	Subsoil [2]	Dry	Moist	Wet	
Ochlockonee	Dark grayish brown.	Dark brown.	Silt loam	Silt loam	Very weak, medium granular.	Slightly hard.	Friable	Slightly sticky.	Recent alluvium from Coastal Plain material.
Oktibbeha	Reddish brown to dark brown.	Red to yellowish red.	Clay to clay loam.	Clay	Moderately fine subangular blocky.	Very hard	Firm	Plastic	Thin acid clays over Selma chalk.
Pheba	Very dark gray to gray.	Light yellowish brown with mottles.	Very fine sandy loam.	Light sandy clay loam.	Very weak to weak, fine to medium, subangular blocky.	Hard (fragipan).	Firm	Nonplastic.	Beds of sand and sandy clays.
Prentiss	Grayish brown	Yellowish brown.	Very fine sandy loam.	Fine sandy clay loam.	Weak, medium, subangular blocky.	Slightly hard to hard.	Friable to firm.	Slightly sticky.	Old alluvium from acid sandy Coastal Plain soils.
Rains	Very dark gray.	Gray, mottled.	Fine sandy loam.	Sandy clay loam.	Very weak, medium, subangular blocky.	Slightly hard.	Friable	Slightly sticky.	Beds of sandy loam and sandy clay loam.
Roanoke	Gray mottled with brown.	Gray mottled with yellowish brown.	Silt loam.	Silty clay loam.	Granular to massive.	Hard	Firm to friable.	Slightly plastic to plastic.	Old alluvium washed from Piedmont soils.
Ruston	Dark grayish brown.	Strong brown.	Fine sandy loam.	Sandy clay loam.	Weak, medium, subangular blocky.	Slightly hard.	Friable	Slightly sticky.	Thick beds of sand and sandy clay.
Sandy alluvial land, somewhat poorly drained.	Dark gray to dark brown.	Variable	Variable	Variable	Structureless	Friable	Friable	Variable	Mixed alluvium from Coastal Plain Upland.
Sawyer	Grayish brown.	Light olive brown.	Fine sandy loam.	Fine sandy clay loam.	Weak, medium, subangular blocky.	Slightly hard.	Friable	Slightly sticky.	Beds of acid clay and sandy clay.
Shubuta	Grayish brown.	Yellowish red to red.	Very fine sandy loam.	Fine sandy clay to silty clay.	Weak, medium, subangular blocky.	Hard	Friable to firm.	Slightly sticky.	Beds of clay, sandy clay, sand, and in places, clay shale.
Stough	Gray	Light yellowish brown.	Fine sandy loam.	Sandy clay loam.	Very weak, medium, subangular blocky.	Slightly hard.	Very friable.	Slightly sticky.	Old alluvium
Sumter	Olive gray to very gray.	Pale olive.	Clay	Clay	Weak, fine, subangular blocky to granular.	Slightly hard.	Friable	Plastic	Selma chalk or marl.
Susquehanna	Grayish brown.	Intensely mottled.	Fine sandy loam.	Clay	Moderate to strong, fine, subangular blocky.	Very hard.	Firm	Very plastic.	Beds of heavy acid clays.

See footnotes at end of table.

SUMMARY OF IMPORTANT CHARACTERISTICS—Continued

Soil depth	Dominant slope range	Internal drainage	Runoff	Permeability of subsoil	Erosion hazard	Moisture relations [4]	Natural fertility	Reaction	Physiographic position	Principal uses [5]
	Percent									
Deep	0–1	Good	Rapid	Moderately rapid.	None (overflows).	Very good.	High	Medium acid to strongly acid.	Flood plains.	Corn, pasture, and hay.
Moderately deep to deep.	3–10	Moderately good.	Moderate to very rapid.	Slow	Moderately high.	Good	Low	Strongly acid.	Acid prairie upland.	Pasture, hay, and oats.
Shallow	0–2	Somewhat poor.	Moderately slow.	Rapid to 20 inches. Then moderately slow.	Low	Fair	Low	Strongly acid.	Upland	Corn, peanuts, and pasture.
Moderately deep.	1–3	Moderately good.	Moderately slow.	Moderately rapid to 30 inches. Then slow.	Low	Good	Low	Strongly acid.	Stream terrace.	Corn, cotton, pasture, and truck crops.
Deep	1–3	Poor	Very slow.	Moderately slow.	Low	Poor	Low	Strongly acid.	Upland	Trees and pasture.
Deep	0–1	Poor	Very slow.	Slow	None	Poor	Moderate.	Strongly acid.	Stream terrace.	Trees and pasture.
Deep	2–8	Good	Rapid	Moderately rapid.	Moderate.	Good	Low	Strongly acid.	Upland	Cotton, corn, oats, peanuts, and hay crops.
Deep	0–1	Somewhat poor.	Moderately slow.	Moderate to rapid.	None (overflows).	Very good.	Moderately high.	Strongly acid.	Flood plains.	Trees, pasture, and corn.
Moderately deep.	2–8	Moderately good.	Rapid	Moderately high.	Moderately high.	Good	Low	Strongly acid.	Upland	Pasture, corn, cotton, hay, and trees.
Moderately deep to deep.	2–10	Moderately good to good.	Rapid	Moderate to moderately slow.	High	Good	Low	Strongly acid.	Upland	Pasture, corn, cotton, and trees.
Shallow	0–1	Somewhat poor.	Slow	Moderately rapid to 20 inches. Then slow.	Low	Fair	Low	Strongly acid.	Stream terrace.	Pasture, corn, and trees.
Moderately deep to deep.	2–7	Good	Very rapid.	Moderately slow.	High	Good	Low	Moderately alkaline.	Prairie upland.	Pasture and hay.
Deep	2–8	Somewhat poor.	Moderately rapid.	Slow	Moderately high.	Good	Low	Strongly acid.	Upland	Trees and pasture.

SOIL SERIES OF MONTGOMERY COUNTY, ALABAMA:

Soil series [1]	Color		Texture		Structure	Consistency of Subsoil [2]			Nature of parent material
	Surface soil [3]	Subsoil	Surface soil	Subsoil [2]	Subsoil [2]	Dry	Moist	Wet	
Swamp	Dark gray.	Gray, mottled.	Variable	Silt loam to clay.	Massive	Friable	Friable	Sticky	Silt, silty clay or clays.
Terrace escarpments (sand and gravel).	Variable	Variable	Sand to sandy loam.	Sands and gravel.	None	Variable	Variable	Variable	Old Coastal Plain alluvium.
Tuscumbia	Dark gray to very dark gray.	Gray, mottled.	Silty clay	Silty clay	Massive	Hard	Friable to firm.	Very plastic.	Recent alluvium from mixed Prairie and Coastal Plain material.
Una	Grayish brown.	Gray, mottled.	Clay	Clay	Massive	Hard	Firm	Very plastic.	Recent alluvium from mixed Prairie and Coastal Plain material.
Vaiden	Dark grayish brown to very dark grayish brown.	Yellowish brown.	Fine sandy loam or silty clay.	Fine sandy clay or clay.	Weak, medium subangular blocky.	Hard	Friable to firm.	Plastic to very plastic.	Thin acid clays over Selma chalk.
Waugh	Grayish brown to light brownish gray.	Yellowish brown.	Fine sandy loam.	Silty clay loam.	Weak fine to medium, subangular blocky.	Slightly hard.	Friable	Sticky	Old alluvium from Coastal Plain and Piedmont.
Wehadkee	Dark gray.	Gray, mottled.	Silt loam	Silty clay loam.	Very weak, coarse, granular.	Slightly hard.	Firm to friable.	Slightly sticky.	Alluvium, mostly from Piedmont material.
West Point	Black to very dark gray.	Dark olive gray.	Clay	Clay	Moderate, medium, subangular blocky.	Very hard	Firm to friable.	Very plastic.	Sediments washed from Sumter, Houston, and similar soils.
Wickham	Dark grayish brown to dark yellowish brown.	Brown and red to yellowish red.	Fine sandy loam and silt loam.	Fine sandy clay and silty clay.	Weak to moderate, fine subangular blocky.	Hard	Firm	Slightly sticky to sticky.	Old alluvium sediments washed mostly from Piedmont soils.
Wilcox	Dark grayish brown.	Mottled yellowish red and strong brown.	Clay loam.	Clay to fine sandy clay.	Massive	Hard	Firm	Plastic	Gray clay shales in places, indurated.

[1] Dominant soil type listed for soil series that have more than one type.
[2] Characteristics of subsoil are usually those of the B_2 horizon.
[3] The color of surface soil for soil with slight or no erosion.
[4] Ratings based on optimum moisture for crop production. Some well-drained soils have very good moisture relations; some wet soils have poor moisture relations.
[5] Listed in order of suitability of crops listed.
[6] Runoff is high after the soil becomes saturated.

SUMMARY OF IMPORTANT CHARACTERISTICS—Continued

Soil depth	Dominant slope range	Internal drainage	Runoff	Permeability of subsoil	Erosion hazard	Moisture relations [4]	Natural fertility	Reaction	Physiographic position	Principal uses [5]
	Percent									
Deep	0–1	Very poor	Very slow	Slow	None	Water stands most of year.	High	Strongly acid.		Trees.
Very shallow.	15–25	Excessive	Rapid	Very rapid	Moderate to high.	Poor	Low	Strongly acid.		Trees and pasture.
Moderately deep to deep.	0–1	Somewhat poor to poor.	Slow	Moderately slow.	None (overflows).	Fair	Moderately high.	Neutral to calcareous.	Flood plain in Prairie section.	Pasture and hay.
Moderately deep to deep.	0–1	Poor	Slow	Slow	None (overflows).	Fair	Moderately high.	Slightly acid.	Flood plain in Prairie section.	Pasture and hay.
Deep	1–8	Somewhat poor to moderately good.	Moderate	Moderate to slow.	Moderately high.	Good	Moderate to moderately low.	Strongly acid.	Upland	Pasture and hay.
Moderately deep.	0–3	Moderately good.	Moderate	Moderate through B_2 horizon.	Moderate	Good	Low	Strongly acid.	Stream terrace.	Cotton, truck crops, corn, and pasture.
Deep	0–1	Poor	Very slow	Moderately slow.	None (overflows).	Too wet.	Moderately high.	Strongly acid.	Flood plains.	Trees and pasture.
Deep	0–2	Moderately good to good.	Slow	Moderately slow to slow.	Low	Good	High	Medium alkaline.	Local alluvium in upland.	Pasture, hay, and corn.
Moderately deep to deep.	0–4	Good	Moderate to slow.	Moderately slow.	Low to moderate.	Good	Moderately low to low.	Strongly acid.	Stream terrace.	Cotton, corn, oats, pasture, and hay.
Moderately deep to deep.	0–3	Moderately good to somewhat poor.	Moderate	Slow to very slow.	Moderate	Good	Low	Strongly acid.	Upland	Pasture and trees.

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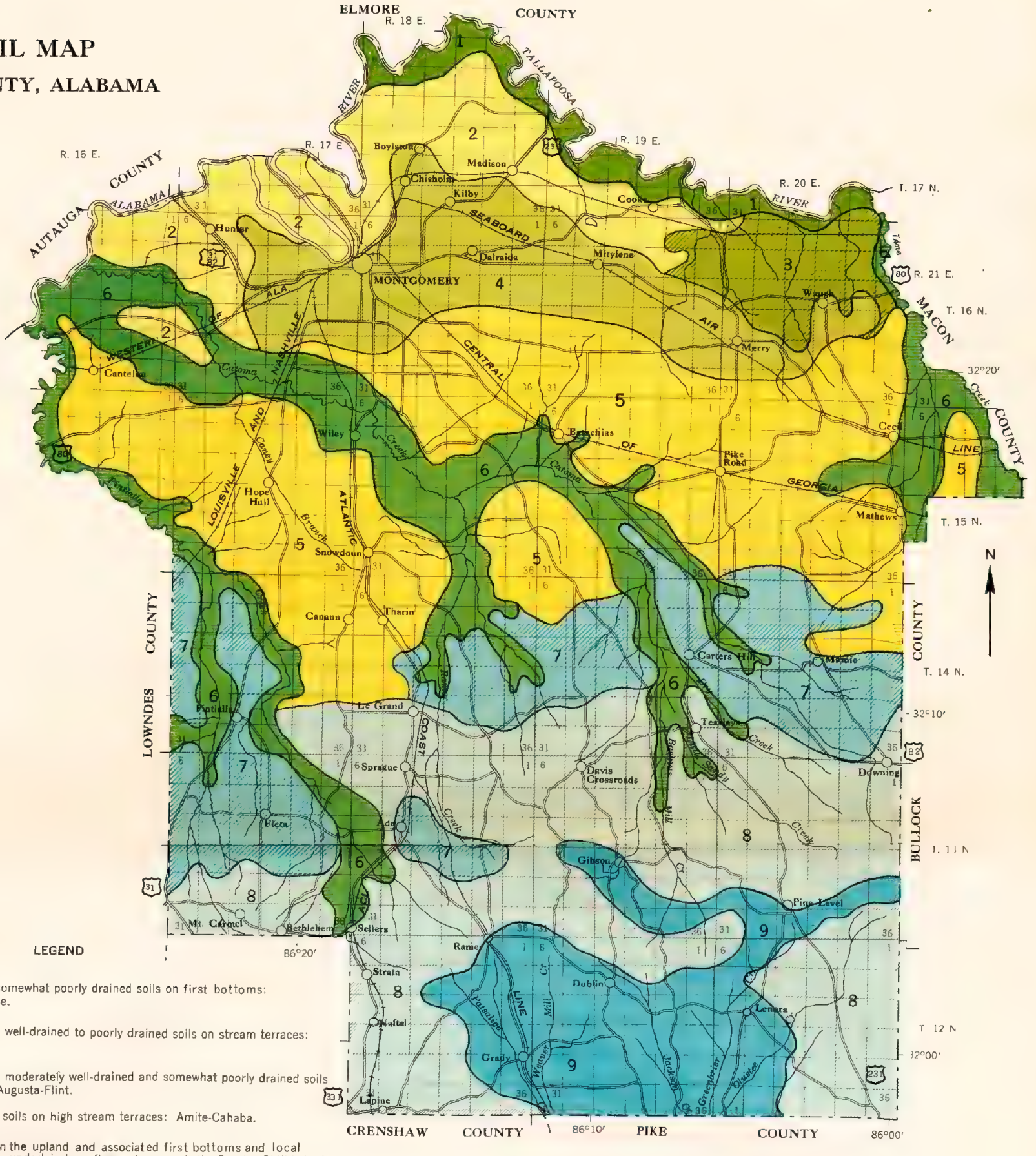
GENERAL SOIL MAP

MONTGOMERY COUNTY, ALABAMA



LEGEND

1 Nearly level, well-drained to somewhat poorly drained soils on first bottoms: Congaree- Chewacla-Wehadkee.

2 Level and very gently sloping, well-drained to poorly drained soils on stream terraces: Cahaba-Wickham-Roanoke.

3 Level and very gently sloping, moderately well-drained and somewhat poorly drained soils on stream terraces: Waugh-Augusta-Flint.

4 Level to sloping, well drained soils on high stream terraces: Amite-Cahaba.

5 Nearly level to sloping soils on the upland and associated first bottoms and local alluvium of the prairie section; underlain by soft limestone or chalk: Sumter-Oktibbeha-Leeper.

6 Nearly level, moderately well drained to somewhat poorly drained soils on low stream terraces and first bottoms: Izagora-Geiger-Una.

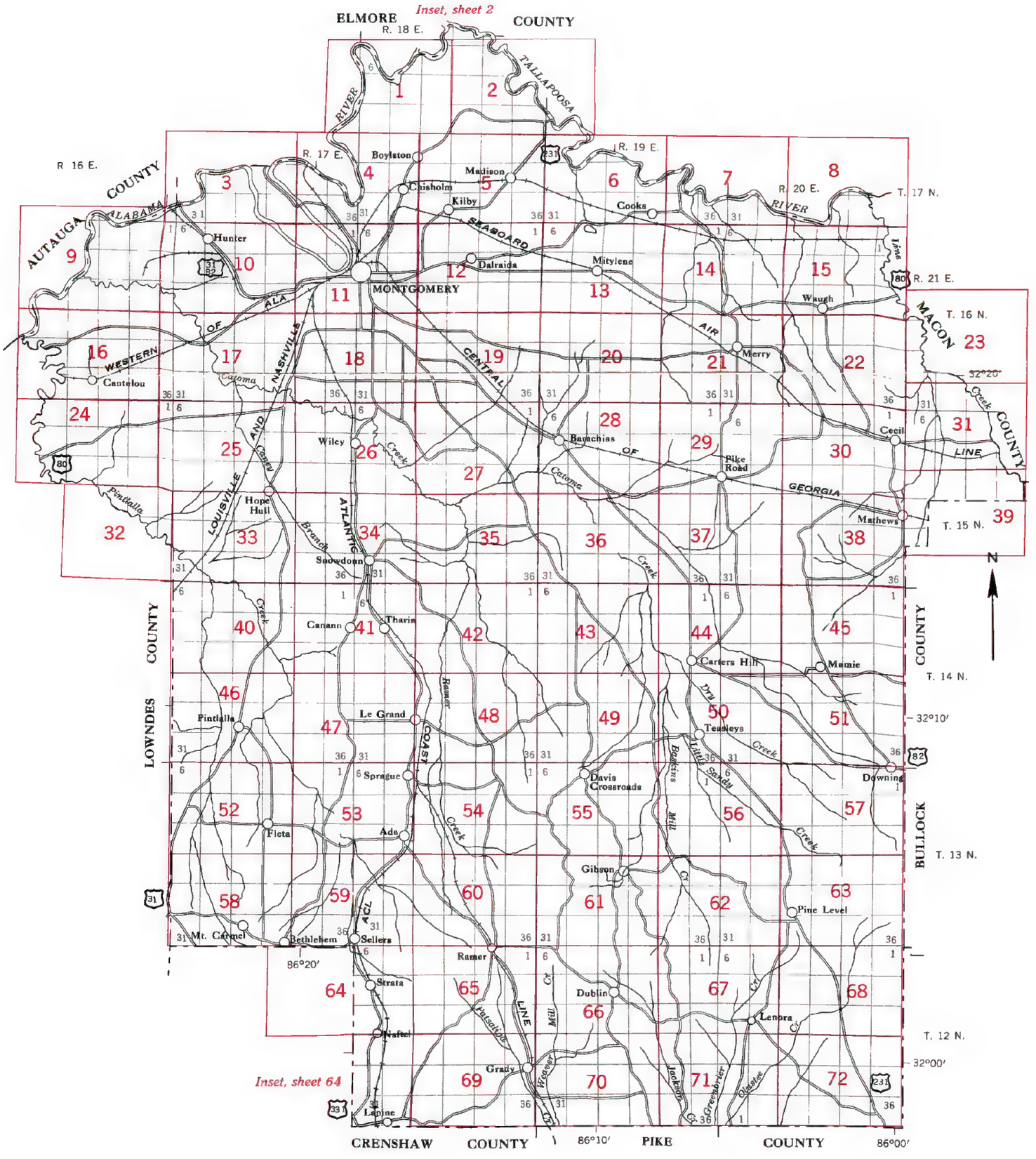
7 Gently sloping to strongly sloping soils, in the prairie section, underlain by soft limestone or chalk: Oktibbeha-Sumter.

8 Sloping to steep soils of variable texture underlain on uplands underlain by sands and clays: Cuthbert-Lakeland-Boswell.

9 Very gently sloping to sloping, moderately well drained to well-drained soils of the upland underlain by sands and clays: Bowie-Shubuta-Ruston.

INDEX TO MAP SHEETS

MONTGOMERY COUNTY, ALABAMA



MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 1

R. 17 E. | R. 18 E.

T. 17 N.

(Joins inset, sheet 2)

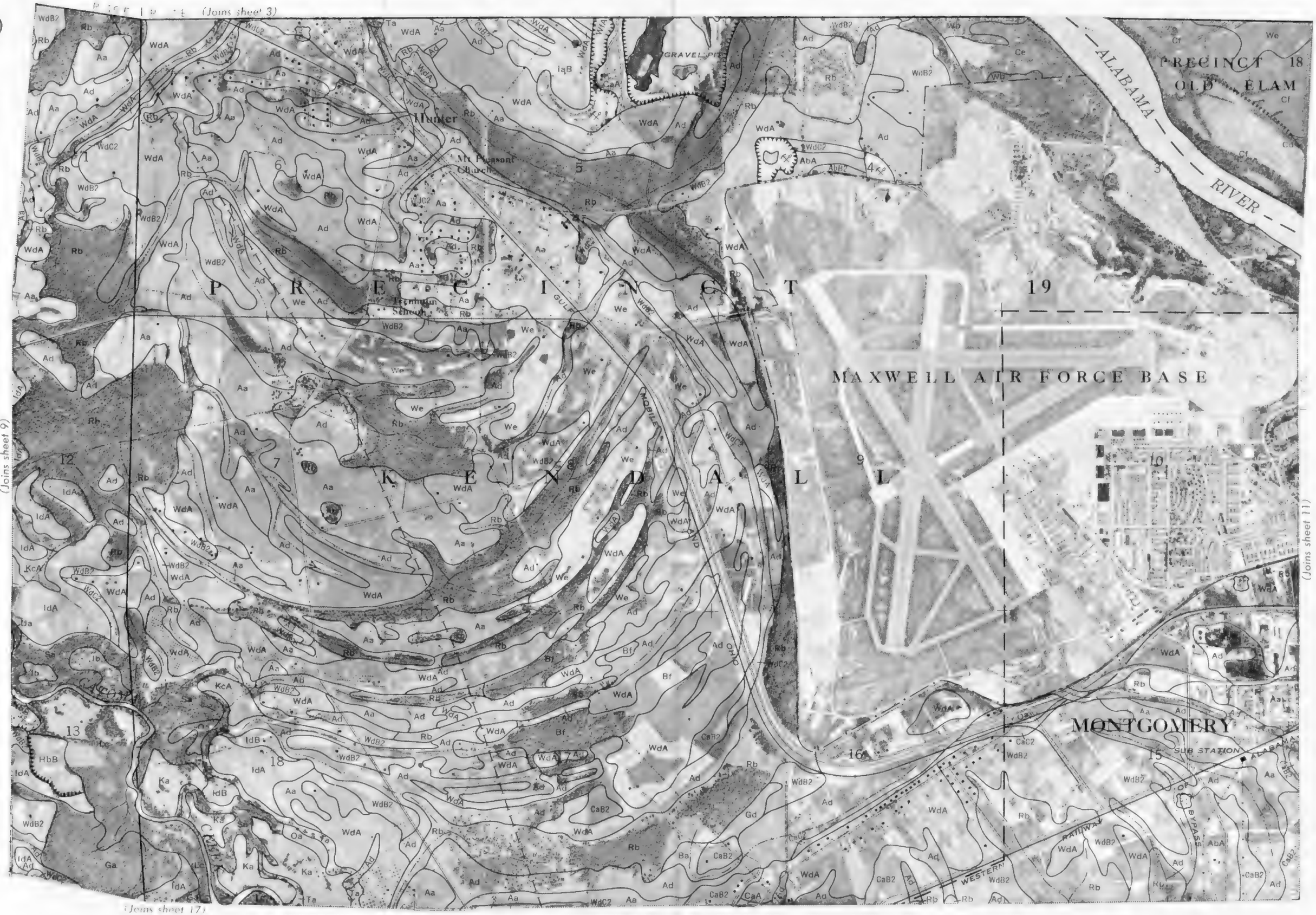
(Joins sheet 2)

(Joins sheet 4) | (Joins sheet 5)

Scale 1:20 000

0 ½ 1 Mile

0 5000 Feet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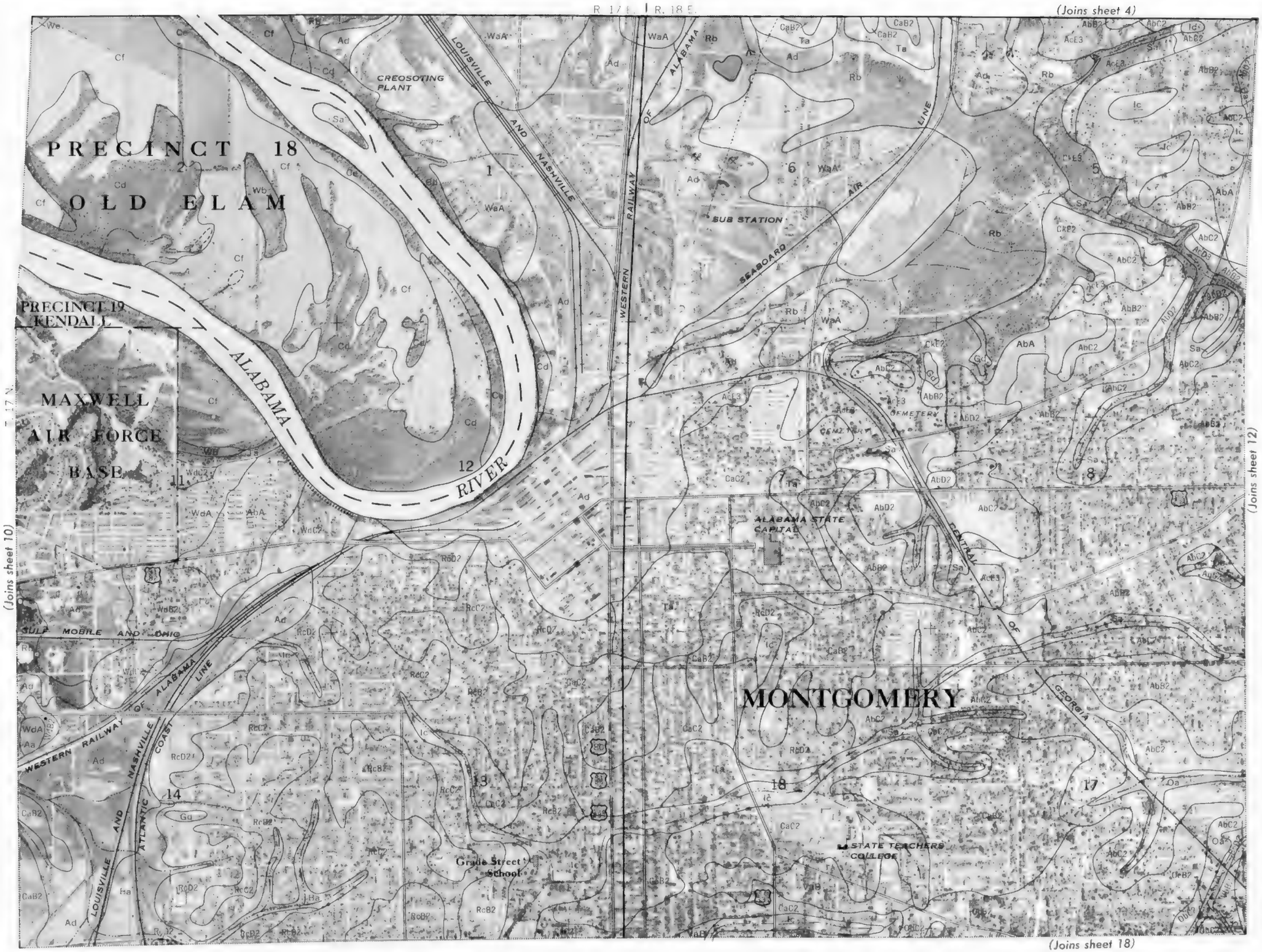
(Joins sheet 9)
(Joins sheet 11)
(Joins sheet 17)
N
PRECINCT 18
OLD ELAM
ALABAMA RIVER
PRECINCT 19
MAXWELL AIR FORCE BASE
MONTGOMERY
SUB STATION
Hunter
Mt Pleasant Church
Pleasant Hill School
GRAVEL PIT
GULF MOBILE & OHIO RAILWAY
WESTERN RAILWAY OF ALABAMA
BYPASS
CAHABA CREEK
1 Mile
Scale 1:20000
5000 feet


R. 17 E.
R. 18 E.
(Joins sheet 4)
11
N
PRECINCT 18
OLD ELAM
PRECINCT 19
KENDALL
MAXWELL
AIR FORCE
BASE
ALABAMA RIVER
CREOSOTING PLANT
LOUISVILLE AND NASHVILLE RAILWAY
ALABAMA LINE
SUB STATION
SEABOARD AIR LINE RAILWAY
CEMETERY
ALABAMA STATE CAPITAL
CENTRAL OF GEORGIA
MONTGOMERY
STATE TEACHERS COLLEGE
Grade Street School
GULF MOBILE AND OHIO
WESTERN RAILWAY OF ALABAMA
LOUISVILLE AND NASHVILLE ATLANTIC COAST LINE
T. 17 N.
(Joins sheet 10)
(Joins sheet 12)
(Joins sheet 18)
0
½
1 Mile
Scale 1:20000
0
5000 Feet

0 ½ 1 Mile Scale 1:20000 0 5000 Feet


R 19 E
(Joins sheet 6)
13
N
T. 16 N.
Frogg Bottom Lake
McLemore School
Mitylene
GRAVEL PIT
SEABOARD AIR LINE
PRECINCT 6
WALKERS
PRECINCT 5
MOUNTAIN
(Joins sheet 12)
(Joins sheet 14)
(Joins sheet 20)
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

(14)

N

(Joins sheet 7)

(Joins sheet 13)

(Joins sheet 15)

(Joins sheet 21)

PRECINCT 21

MOUNT MEIGS

Mt Meigs Station

WESTERN RAILWAY OF ALABAMA

GRAVEL PIT

STATE FARM SCHOOL

SEABOARD AIR LINE

Mt Meigs

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet

MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 15

16

(Joins sheet 9)

N

R. 16 E.

T. 10 N.

ALTAUGA COUNTY — ALABAMA — RIVER

LOWNDES COUNTY

PINTLALLA CREEK

PRECINCT

KENDALL

ALABAMA & GREAT SOUTHERN RAILWAY

WESTERN RAILWAY OF ALABAMA

Antioch Church

Lillian Dunge School

Stone Chapel

Fairview Church

Klondike Bar Church

Cantelou

Stones

Ga

Branch

19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

(Joins sheet 24)

(Joins sheet 17)

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet


(Joins sheet 10)
17
N
R.16 E.
R.17 E.
T.16 N.
MONTGOMERY
BYPASS
Mt Olive Church
Vazis Store
McLemore Store
Lamuck School
Memorial Chapel
Pilgrim Church
St Matt Church
RAILWAY
WESTERN
ALABAMA
CATOMA CREEK
NASHVILLE
LOUISVILLE
PRECINCT
KENDALL
(Joins sheet 16)
(Joins sheet 18)
(Joins sheet 25)
0
½
1 Mile
Scale 1:20000
0
5000 Feet

(Joins sheet 11)

(18)

N

(Joins sheet 17)

(Joins sheet 19)

Joins sheet 26)

R. 17 E. | R. 18 E.

Sidney Lanier School

St Jude

Mobile Heights

Ridgecrest

Cleveland Meadows

MONTGOMERY

HUNTINGTON COLLEGE

COUNTRY CLUB

CLUB HOUSE

SUB STATION

RADIO STATION WSFA

Queen of Mercy Church

PRECINCT 19

KENDALL

PRECINCT 20

WALKERS

LOUISVILLE AND NASHVILLE

ATLANTIC COAST LINE

BYPASS

CATOMA CR

23 24 19 20 25 30 29 26 35 36 31 32

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet

R. 18 E

(Joins sheet 12)

19

N

T. 16 N

MONTGOMERY

PRECINCT

WALKERS

MASONIC HOME

CENTRAL OF GEORGIA

GOLF COURSE

BYPASS

White Creek

20

(Joins sheet 18)

(Joins sheet 20)

(Joins sheet 27)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

(2)

N

(Joins inset, sheet 2)

R. 18 E.

T. 18 N.

T. 17 N.

TALLAPOOSA RIVER

DEAD RIVER

ELMORE COUNTY

PRECINCT 18

OLD ELAM

STATE FARM

GRAVEL PIT

(Joins sheet 1) | (Joins sheet 2)

(Joins sheet 1)

(Joins sheet 5) | (Joins sheet 6)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 20

(Joins sheet 14)

N

R 19 E. | R. 20 E.

Pleasant Grove Church

George Washington School

Antioch Church

Grace Church

Murdock Church

Merry

Ebenezer Church

SEABOARD

AIR LINE

Creek

PRECINCT 21

MONTGOMERY

(Joins sheet 20)

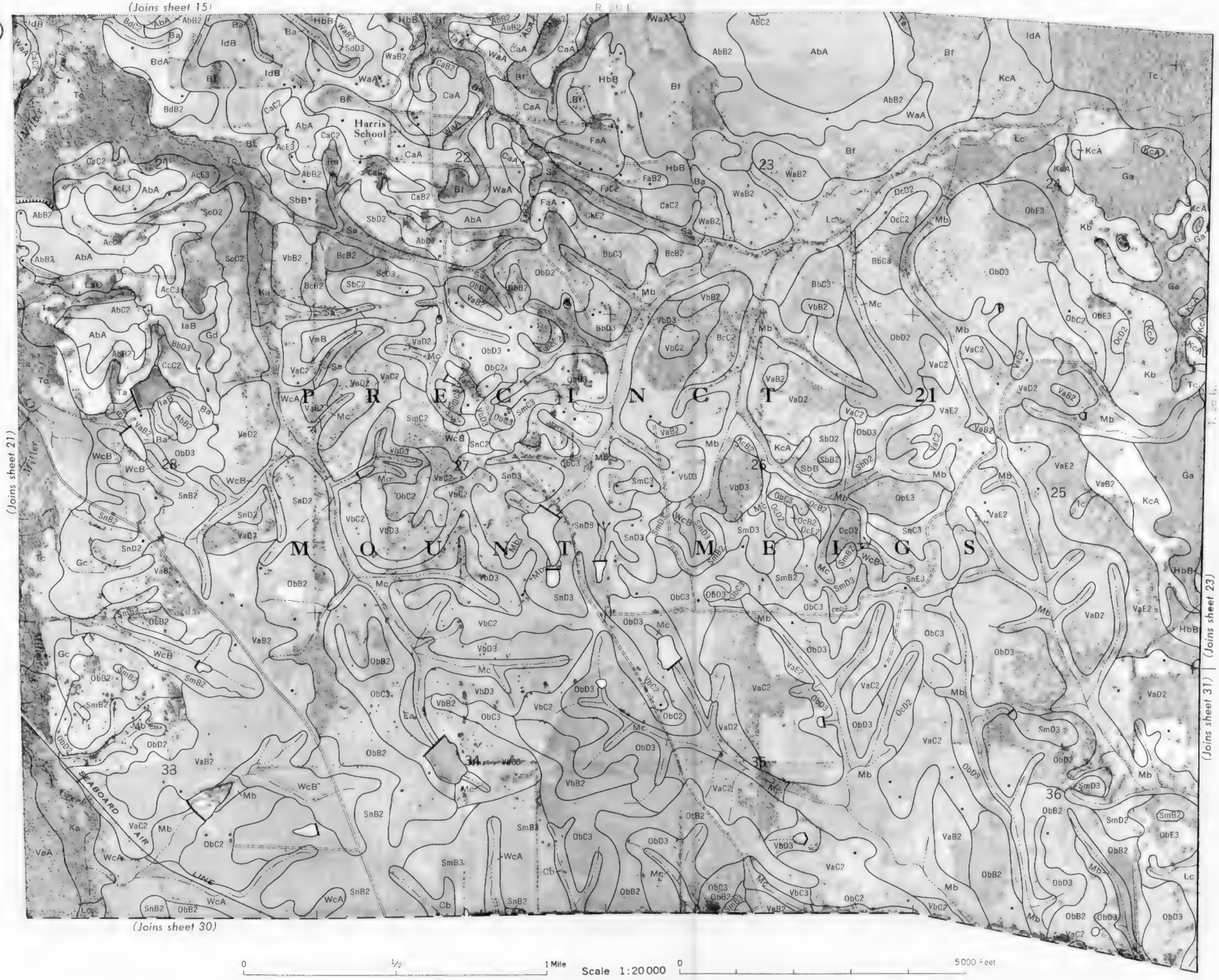
(Joins sheet 22)

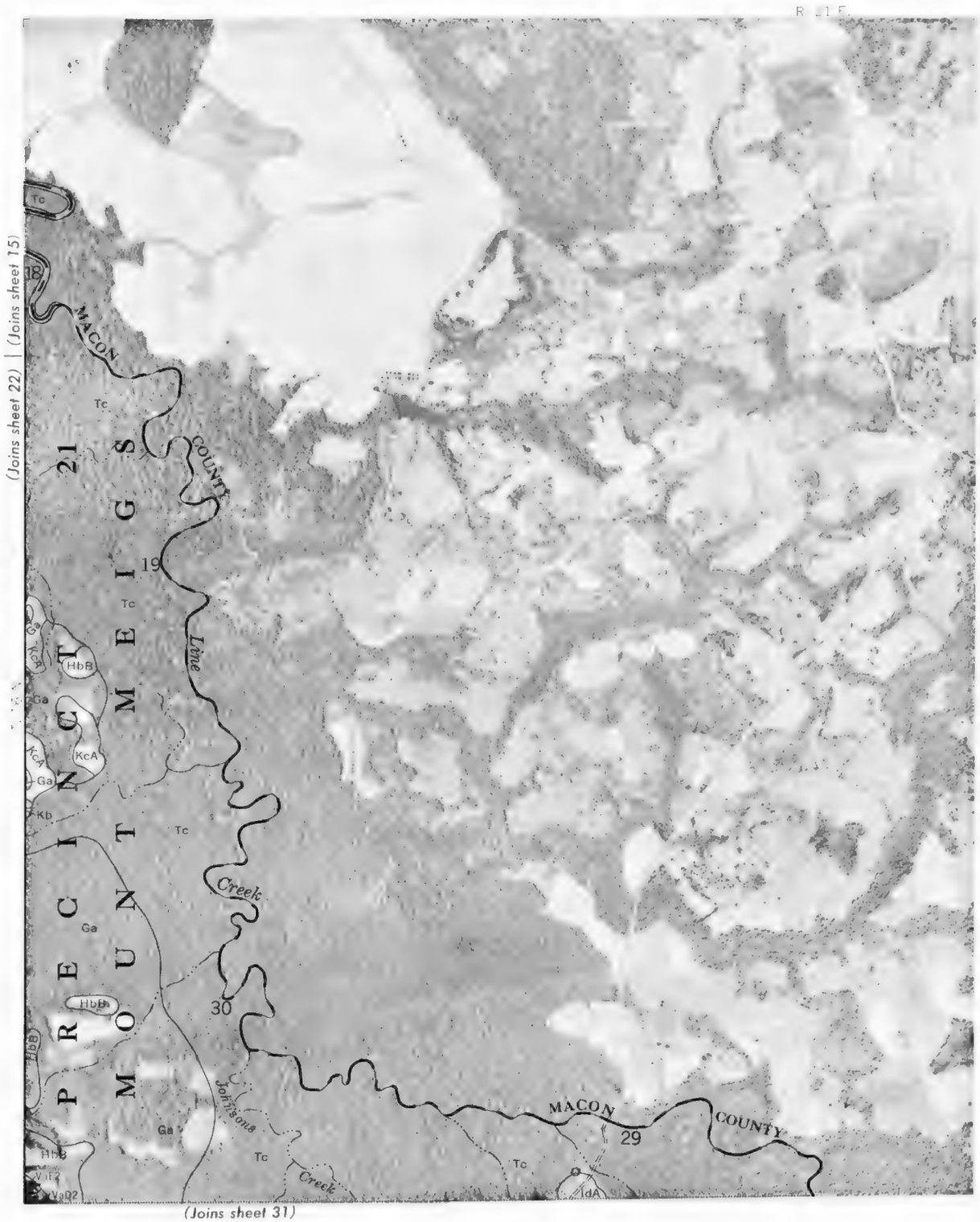
(Joins sheet 29)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet


(Joins sheet 15)
(Joins sheet 21)
(Joins sheet 30)
(Joins sheet 31)
(Joins sheet 23)
N
R 6 E
Harris School
PRECINCT
MOUNTAIN MEIGS
SEABOARD AIR LINE
Miller
Ezell
21
22
23
24
25
26
27
28
33
34
35
36
0 1/2 1 Mile
Scale 1:20000
0 5000 Feet



0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

(24)

(Joins sheet 16)

N

R. 1 E.

T. 15 N.

PRECINCT 9

MCGEHEE

LOWNDES COUNTY

PINTLALLA CREEK

Pintlalla Creek

Catoma School

Mt Sinai Church

Chapman Creek

80

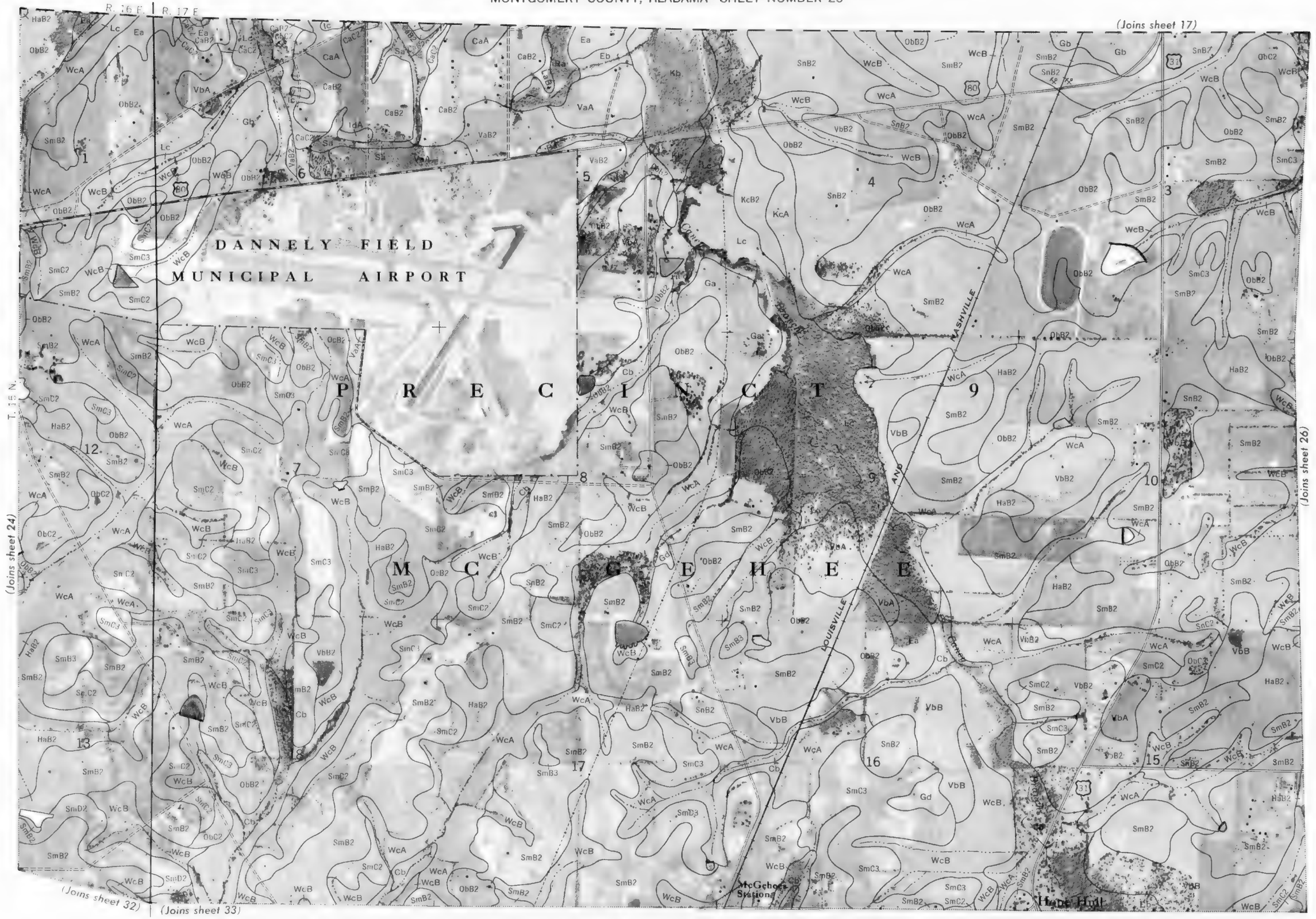
(Joins sheet 25)

(Joins sheet 32)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet



0 ½ 1 Mile Scale 1:20000 0 5000 Feet

(26)

(Joins sheet 18)

R. 17 E. | R. 18 E.

T. 16 N.

N

PRECINCT 9

PRECINCT 11

PRECINCT 12

PRECINCT 22

PRECINCT 8

DOOLEY

SNOWDOUN

NORMAN BRIDGE

ATLANTIC COAST LINE

CATOMA CREEK

Roxanna Church

Wiley

White Creek

(Joins sheet 25)

(Joins sheet 27)

(Joins sheet 34)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

R. 18 E.

(Joins sheet 19)

(Joins sheet 26)

(Joins sheet 28)

(Joins sheet 35)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

(Joins sheet 20)

R 1 E

T. 16 N.

N

P O R E C I N C T

D O O L E Y

CENTRAL OF GEORGIA

Barachias

Pine Grove School

Pine Grove Church

Perry Mill

Colona Creek

(Joins sheet 27)

(Joins sheet 29)

(Joins sheet 36)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet


R. 19 E.
R. 20 E.
(Joins sheet 21)
29
N
(Joins sheet 28)
(Joins sheet 30)
(Joins sheet 37)
PRECINCT 17
PIKE ROAD
Pike Road
Peace Church
CENTRAL OF GEORGIA
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet


R. 16 E.
R. 17 E.
3
N
ALABAMA RIVER
ELMORE COUNTY
AUTAUGA CO.
ELMORE COUNTY
PRECINCT 18
PRECINCT 19
KENDALL
GRAVEL PIT
GRAVEL PIT
GULF MOBILE AND OHIO
GAS
22
27
28
29
30
31
32
33
34
36
(Joins sheet 4)
(Joins sheet 9)
(Joins sheet 10)
0
½
1 Mile
Scale 1:20000
0
5000 Feet

MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 30

(Joins sheet 23)

R. 21 E.

31

N

(Joins sheet 22)

(Joins sheet 30)

T. 16 N.

PRECINCT 21

MOUNT MEIGS

PRECINCT 17

PIKE ROAD

Rosenwhal School

MACON COUNTY

Line

Creek

Johnsons Slough

Mathews Slough

Panther Creek

SEABOARD AIR LINE

31 32 33 6 5 4 7 8 9 10

Ga HbB VaD2 VaE2 Tc IdA Mb ObB2 Lc KcB2 KcA Gc SmD2 WcB SnE3 ObD2 ObC2 ObD3 Mc SnD2 SmB2 WcA SmD3 Ge VaB2 Cc Kb SmC2

(Joins sheet 39)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

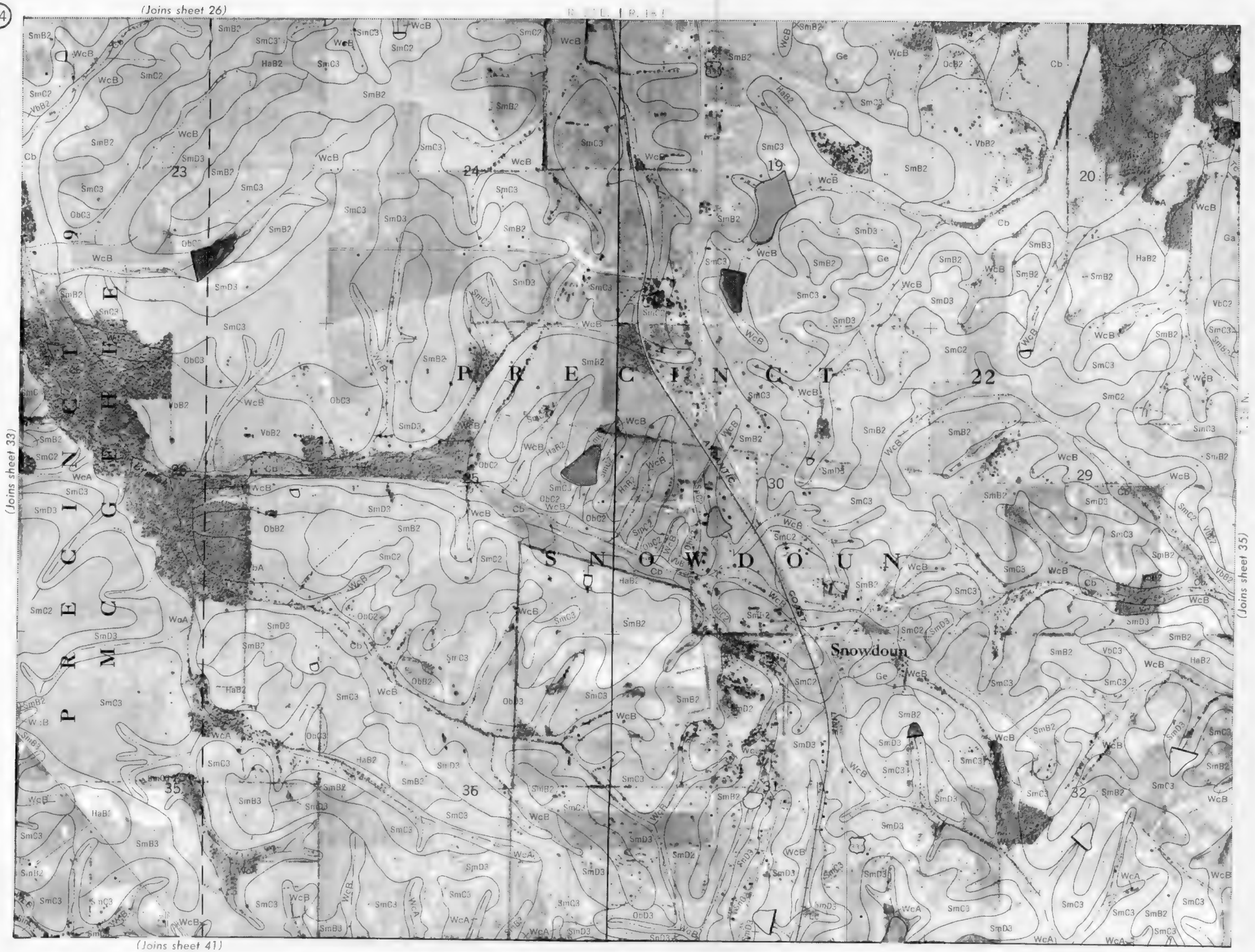
N

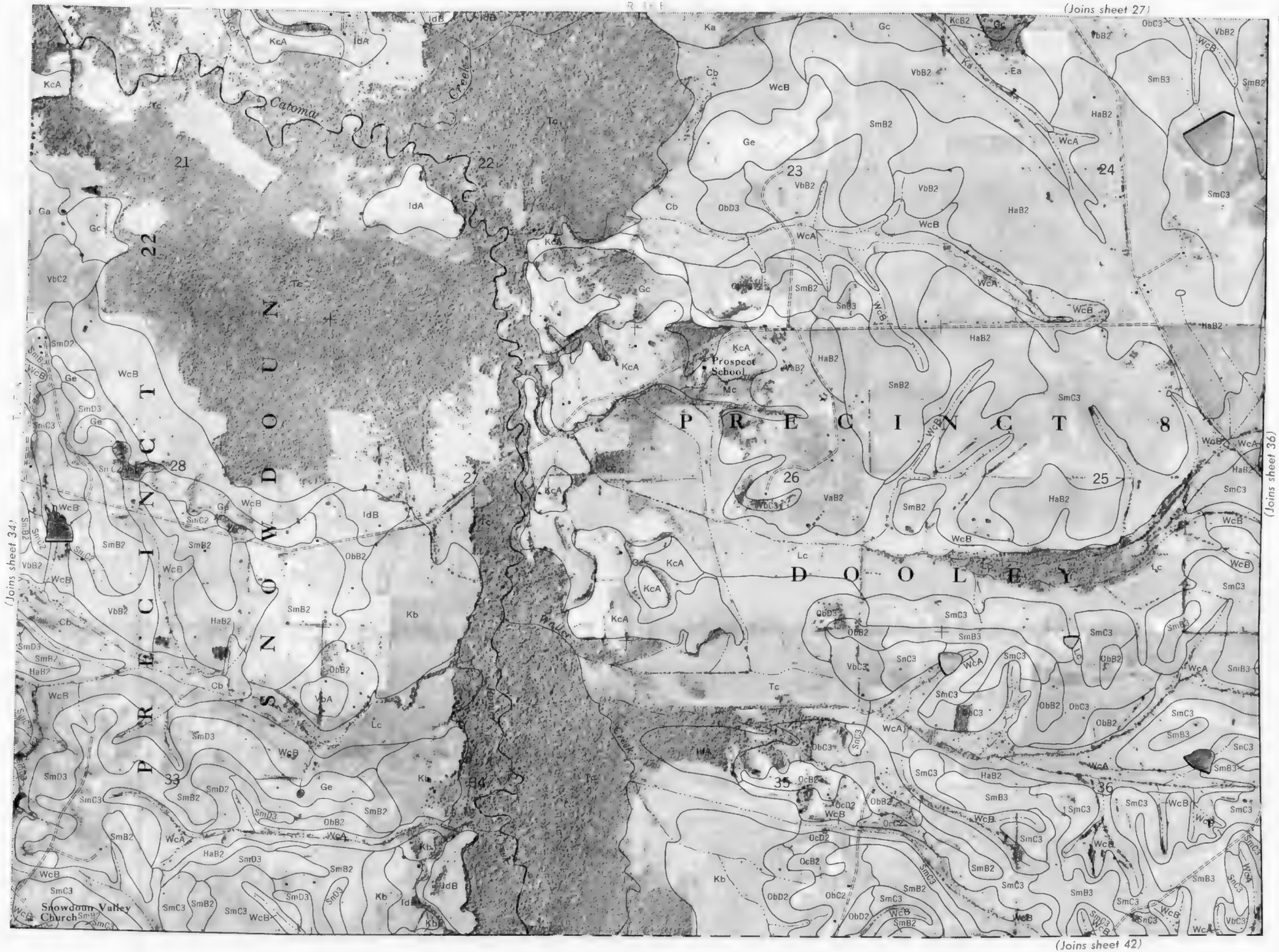
R. 16 E.

(Joins sheet 24) | (Joins sheet 25)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet


R. 17 E.
(Joins sheet 25)
33
N
McGehees Station
Hope Hull
Carey
Brand
NASHVILLE
PRECINCT 9
MCGEHEE
Fish Pond
Pintlalla
LOUISVILLE
Creek
Shiloh Church
LOWNDES COUNTY
T. 15 N.
(Joins sheet 32)
(Joins sheet 34)
(Joins sheet 40)
19
20
21
22
29
28
27
30
31
32
33
34
9
0
½
1 Mile
Scale 1:20000
0
5000 Feet


34
(Joins sheet 26)
N
(Joins sheet 33)
(Joins sheet 35)
(Joins sheet 41)
PRECINCT 22
SNOWDOUN PRECINCT
Snowdoun
23
24
19
20
9
25
30
29
26
35
36
31
32
SmB2
WcB
SmC3
SmC2
SmD3
ObC3
VbB2
HaB2
Ge
Cb
SmB3
VbC2
WcA
ObB2
SmD2
0
½
1 Mile
Scale 1:20000
0
5000 Feet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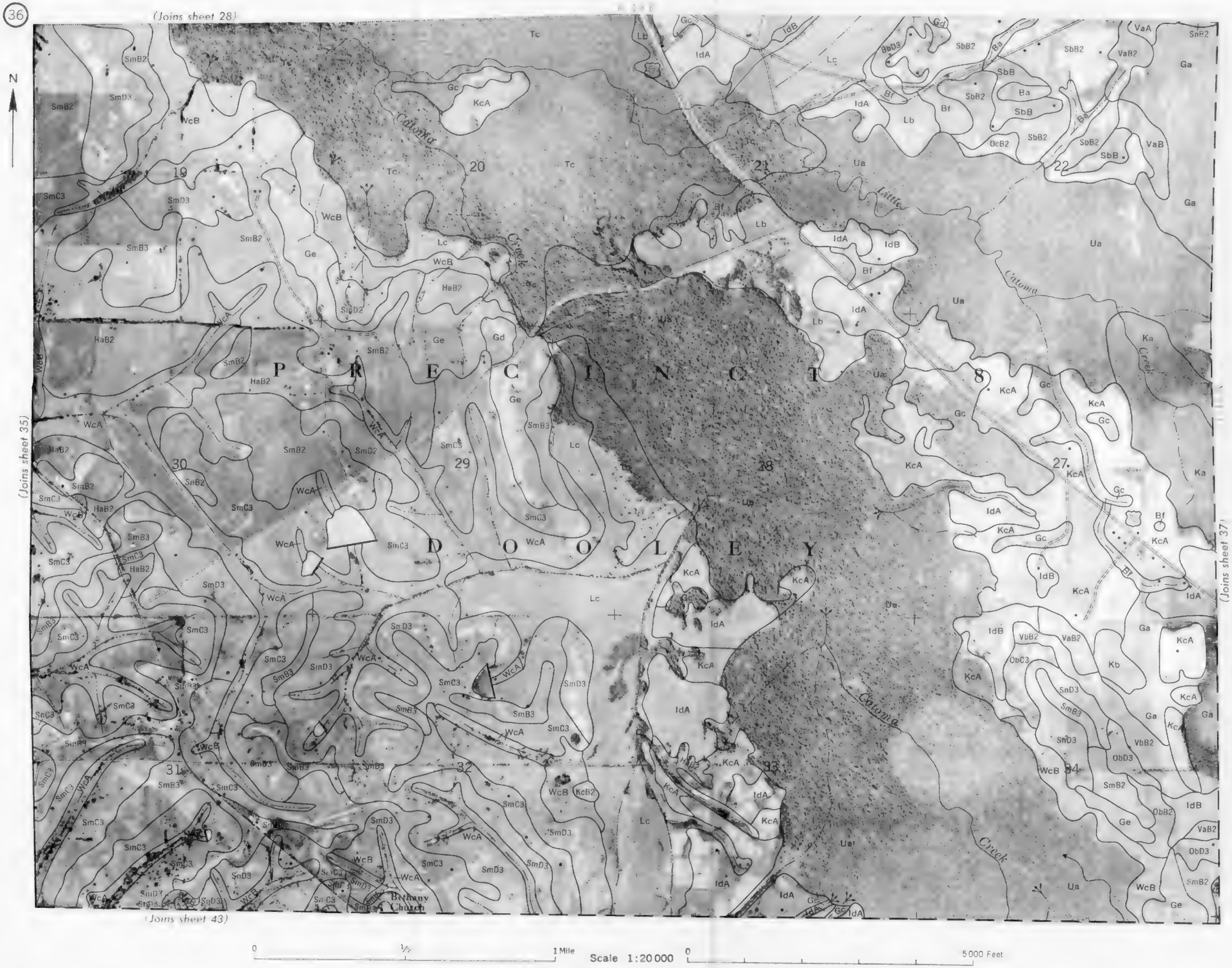
35
N
Catoma Creek
Walter Bowden
Prospect School
Snowdoun Valley Church
T 22 N
R 18 E
PRECINCT 8
DOOLEY PRECINCT
21
22
23
24
25
26
27
28
33
34
35
36
(Joins sheet 34)
(Joins sheet 36)
(Joins sheet 42)
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet


36
N
(Joins sheet 28)
(Joins sheet 35)
(Joins sheet 37)
(Joins sheet 43)
PRECINCT
DOOLEY
Catoma
Little
Creek
Bethany Church
19
20
21
22
29
28
27
30
31
32
33
34
8
Tc
Lb
IdA
Gc
KcA
Lc
Bf
IdB
Ua
Gd
BbD3
SbB2
Ba
SbB
VaA
VaB2
VaB
SnB2
Ga
SmB2
SmD3
SmC3
WcB
Ge
HaB2
SmD2
WcA
SmB3
KcB2
VbB2
VaB2
ObC3
ObD3
OcB2
Kb
Ka
0
½
1 Mile
Scale 1:20000
0
5000 Feet

0 ½ 1 Mile Scale 1:20 000 0 5 000 Feet

(38)

(Joins sheet 30)

(Joins sheet 39)

(Joins sheet 37)

(Joins sheet 45)

N

London

Mathews

St Mathews Church

Mathews Church

Lilly Hill Church

Mt Pleasant School

Mt Pleasant Church

Slough

Creek

Mc Dowell

CENTRAL OF GEORGIA

P R E C I N C T

P I K E R O A D

21 22 23 24 25 26 27 28 33 34 35 36 17

COUNTY

BULLOCK

0 ½ 1 Mile

Scale 1:20000

0 5000 feet

(Joins sheet 31)

(Joins sheet 30)

(Joins sheet 38)

N

R. 21 E.

T. 15 N.

PRECINCT

PIKE

ROA

D

Stough

Mathews

St Lukes Church

Johnsons Creek

Panther Creek

Lime

MACON COUNTY

CENTRAL OF GEORGIA

BULLOCK COUNTY

BULLOCK COUNTY

17

18

19

30

16

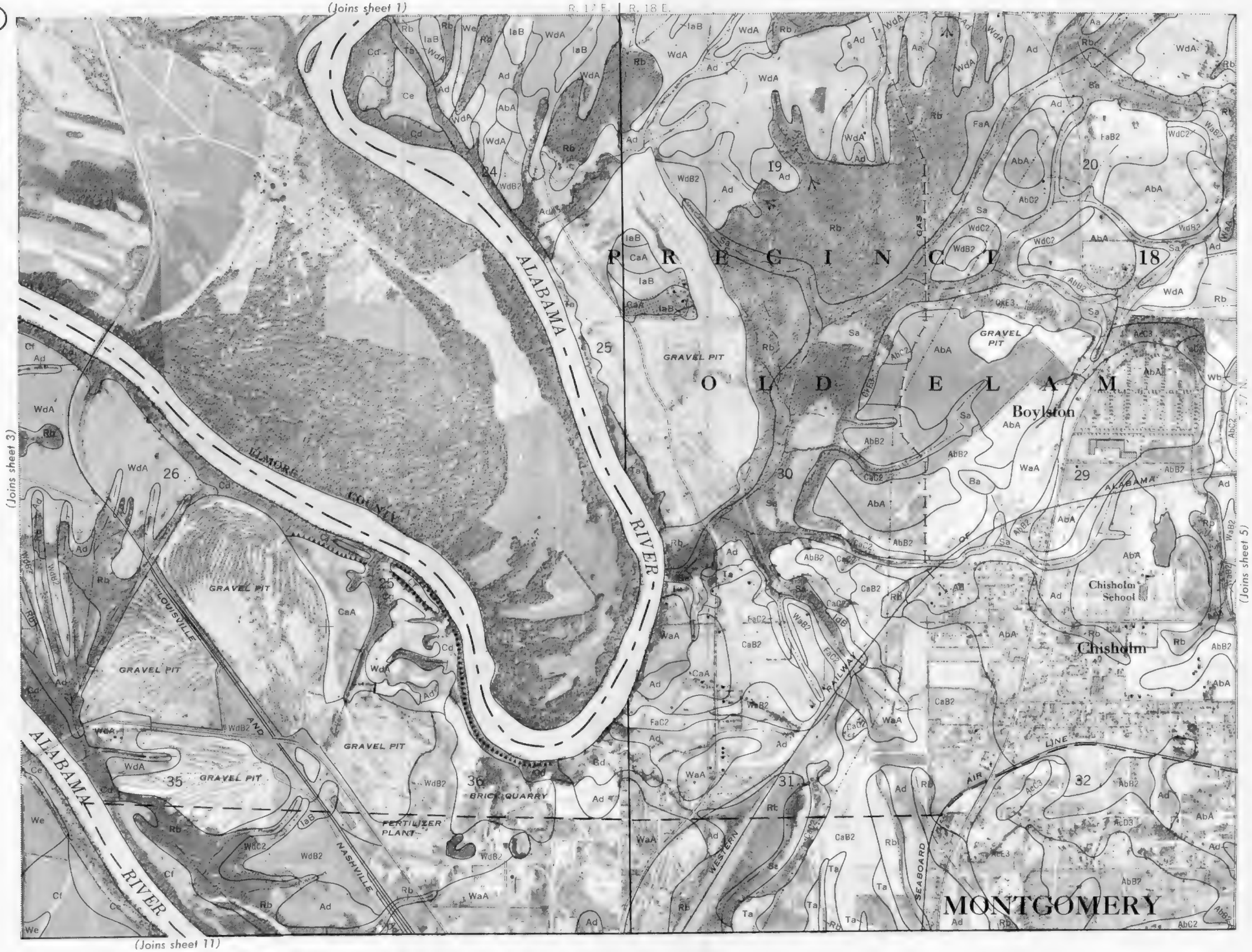
15

KcA Tc VbB2 WcA SmB2 VbC3 SmC3 SmB3 Kb Lc KcB2 Es WcB ObC3 VbB2 IdA Gc Ga Ge WcB Ua Mc

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet


4
N
(Joins sheet 1)
R. 17 E.
R. 18 E.
(Joins sheet 3)
(Joins sheet 5)
(Joins sheet 11)
PRECINCT
OLDELAM
ELMORE COUNTY
ALABAMA RIVER
GRAVEL PIT
BRICK QUARRY
FERTILIZER PLANT
LOUISVILLE AND NASHVILLE RAILWAY
WESTERN RAILWAY OF ALABAMA
SEABOARD AIR LINE
GAS
Boylston
Chisholm School
Chisholm
MONTGOMERY
19
20
18
24
25
26
30
29
35
36
31
32
0
½
1 Mile
Scale 1:20 000
0
5000 Feet

(40)

(Joins sheet 33)

N

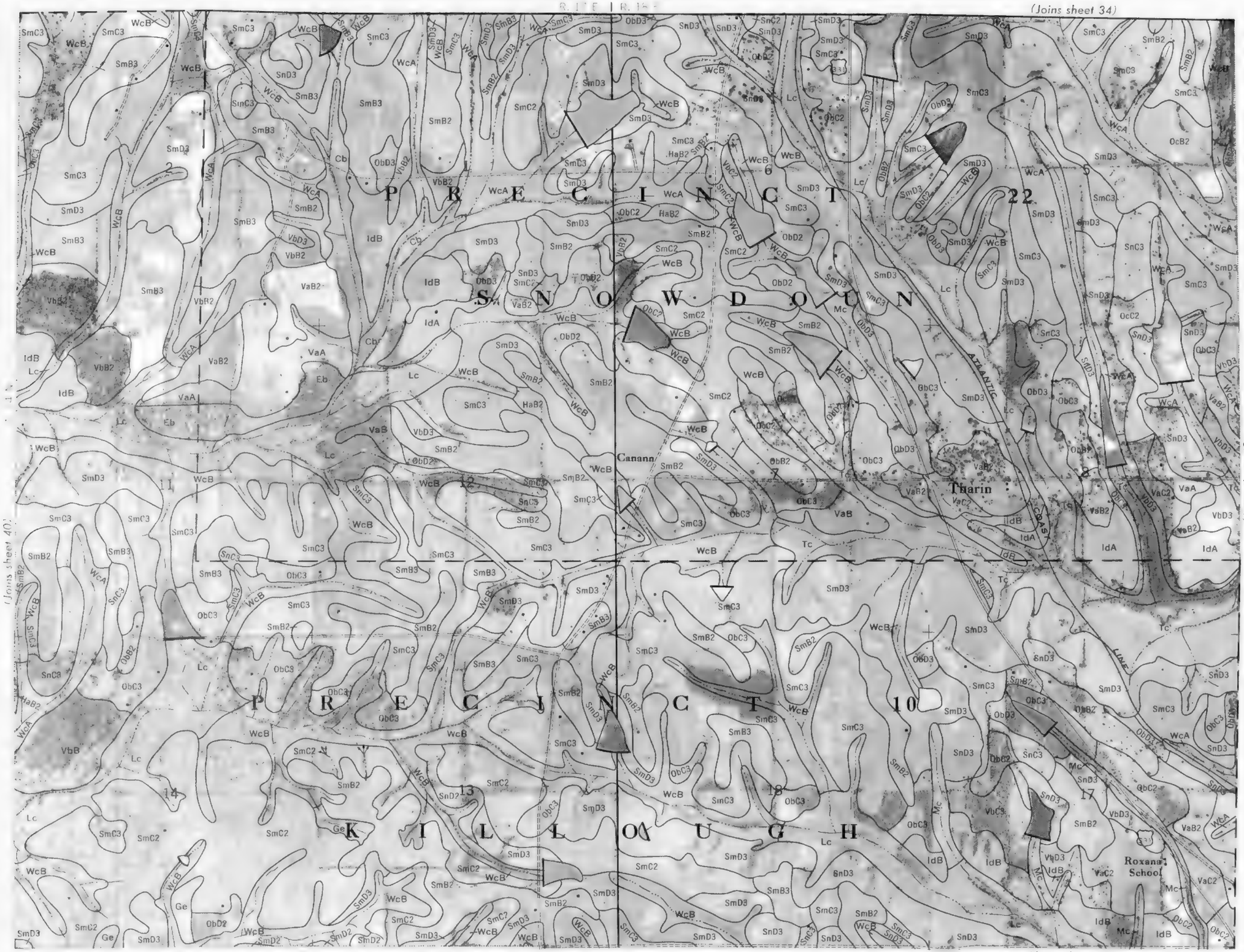
(COUNTY)

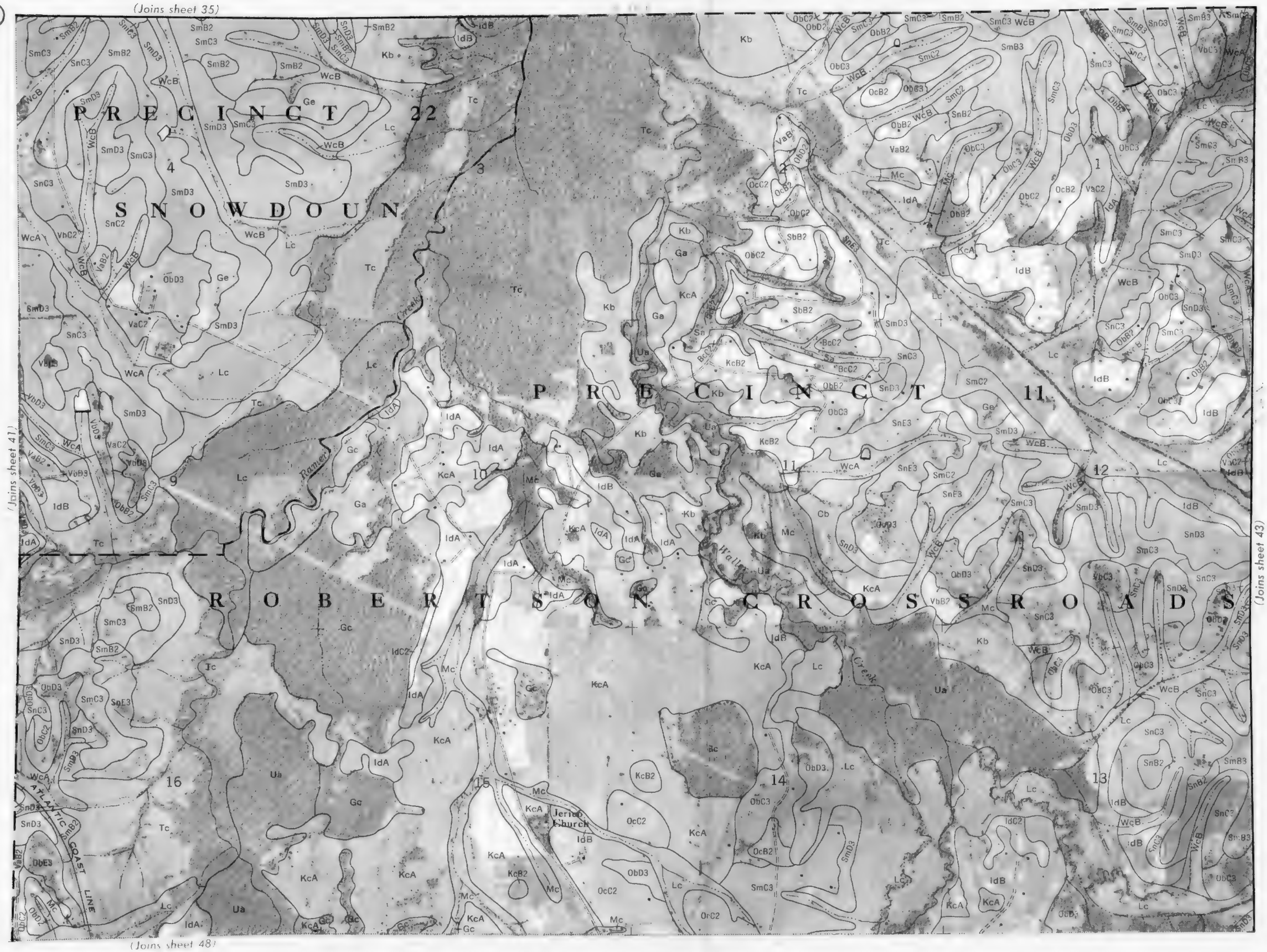
LOWNDES

(Joins sheet 41)

Joins sheet 46

0 ½ 1 Mile Scale 1:20000 0 5000 Feet


R. 17 E
R. 18 E
(Joins sheet 34)
41
N
PRECINCT 22
SNOWDOUN
PRECINCT 10
KILLOUGH
Canann
Tharin
Roxana School
ATLANTIC COAST LINE
(Joins sheet 40)
(Joins sheet 42)
(Joins sheet 47)
0 ½ 1 Mile
Scale 1:20000
0 5000 feet


42
(Joins sheet 35)
N
PRECINCT 22
SNOWDOUN
PRECINCT 11
ROBERTSON CROSS ROADS
Rayner Creek
Wallace Creek
Jericho Church
ATLANTIC COAST LINE
(Joins sheet 41)
(Joins sheet 43)
(Joins sheet 48)
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet


R. 19 E.
T. 14 N.
(Joins sheet 36)
(Joins sheet 42)
(Joins sheet 44)
(Joins sheet 49)
N
PRECINCT 11
ROBERTSON CROSSROADS
McIntyre School
Hills Lake
Catoma Creek
Sandy Creek
Stoudy Creek
0
½
1 Mile
Scale 1:20000
0
5000 Feet


(44)
N
(Joins sheet 37)
(Joins sheet 43)
(Joins sheet 45)
(Joins sheet 50)
R. 20 E.
R. 21 E.
PRECINCT
PORTERS
Pollock Creek
Little Creek
Caterma Creek
Dirt Creek
Liberty Church
Chapel Grade School
Carters Hill
1
2
5
6
7
8
11
12
13
14
17
18
0
½
1 Mile
Scale 1:20000
0
5000 Feet


R 20 E
(Joins sheet 38)
45
N
PERRY COUNTY
BULLOCK COUNTY
(Joins sheet 44)
(Joins sheet 51)
Cherry Hill Church
Cherry Hill School
Marnie
Scale 1:20000
1 Mile
5000 Feet

(46)

(Joins sheet 40)

N

COUNTY

LOWNDES

PRECINCT KILLOUGH

Pintlalla

Pintlalla School

Liberty Church

Tabernacle Church

Pintlalla Cemetery

Tankersley School

Pintlalla Creek

Pinchony Creek

(Joins sheet 47)

(Joins sheet 52)

0 ½ 1 Mile

Scale 1:20000

0 5000 feet

(Joins sheet 41)

47

N

PRECINCT KILLEN

PRECINCT LOUGHH

Mt Moab Church

New Sandis Church

LeGrand

Corner School

(Joins sheet 46)

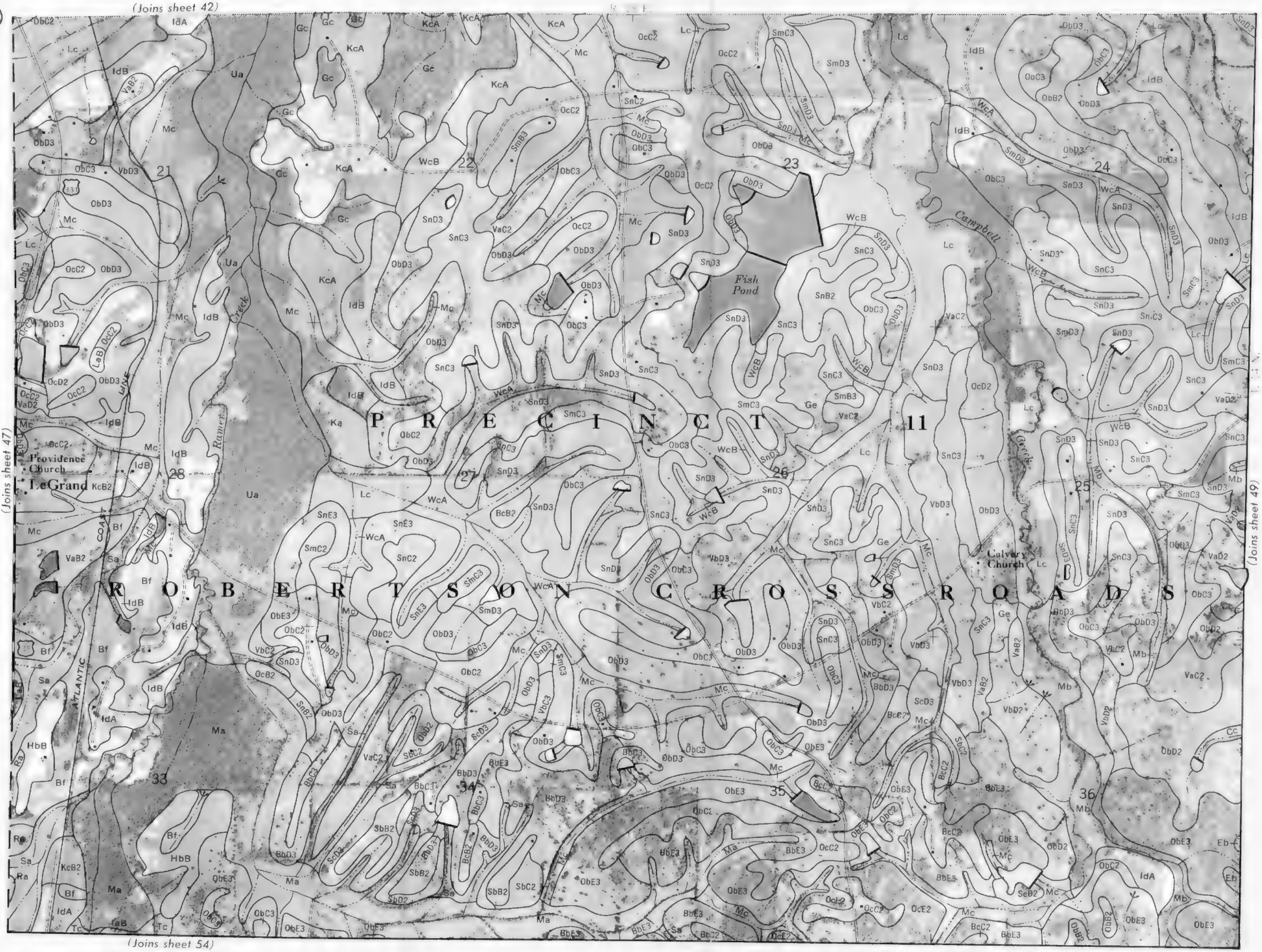
(Joins sheet 48)

(Joins sheet 53)

0 1/2 1 Mile

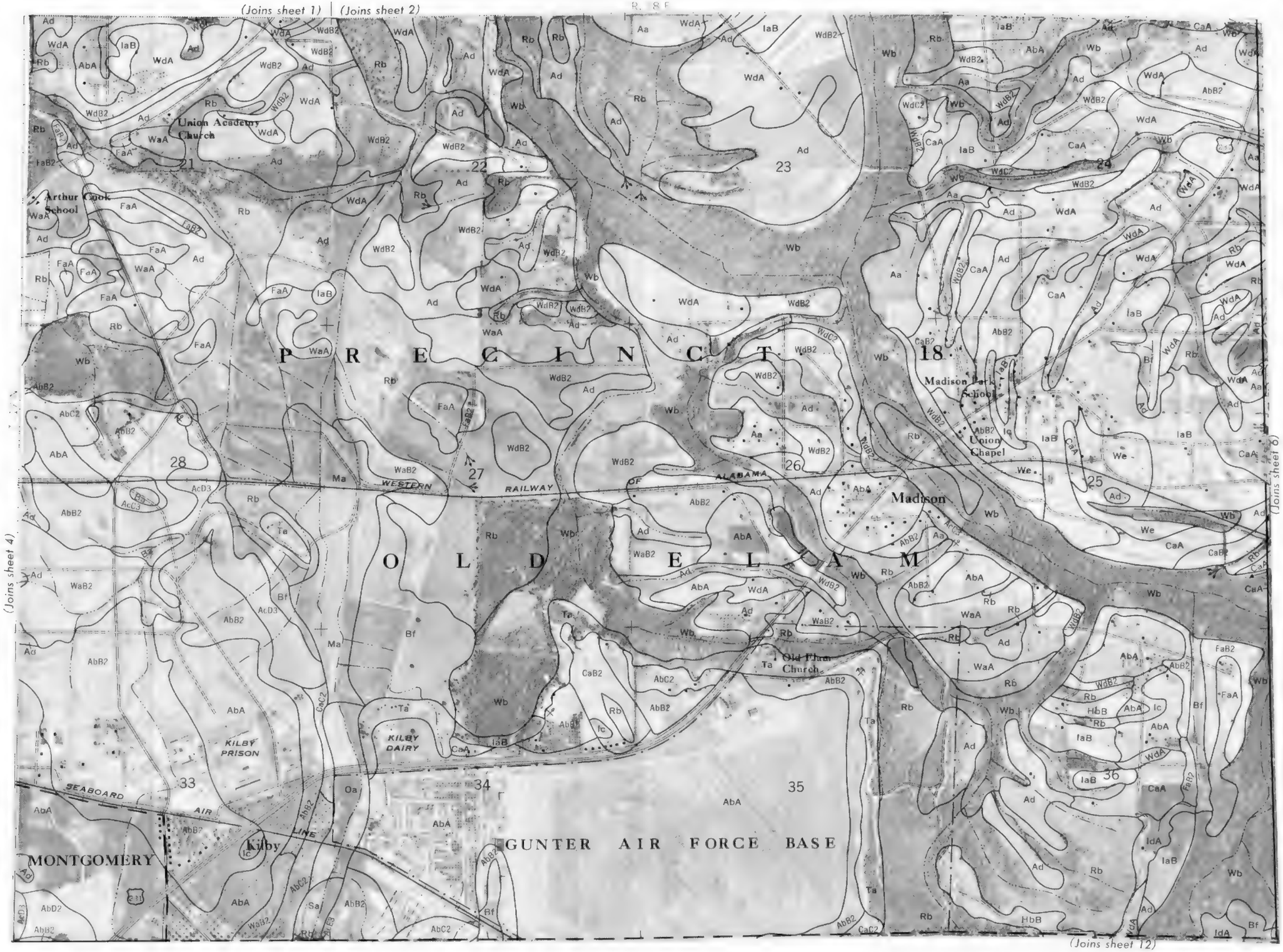
Scale 1:20000

0 5000 Feet


48
N
(Joins sheet 42)
(Joins sheet 47)
(Joins sheet 49)
(Joins sheet 54)
PRECINCT 11
ROBERTSON CROSS ROADS
Providence Church
LeGrand
Calvary Church
Fish Pond
Campbell
Creek
Ramer
ATLANTIC COAST
21
22
23
24
25
26
27
28
33
34
35
36
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

0 ½ 1 Mile Scale 1:20000 0 5000 Feet

(Joins sheet 1) | (Joins sheet 2)

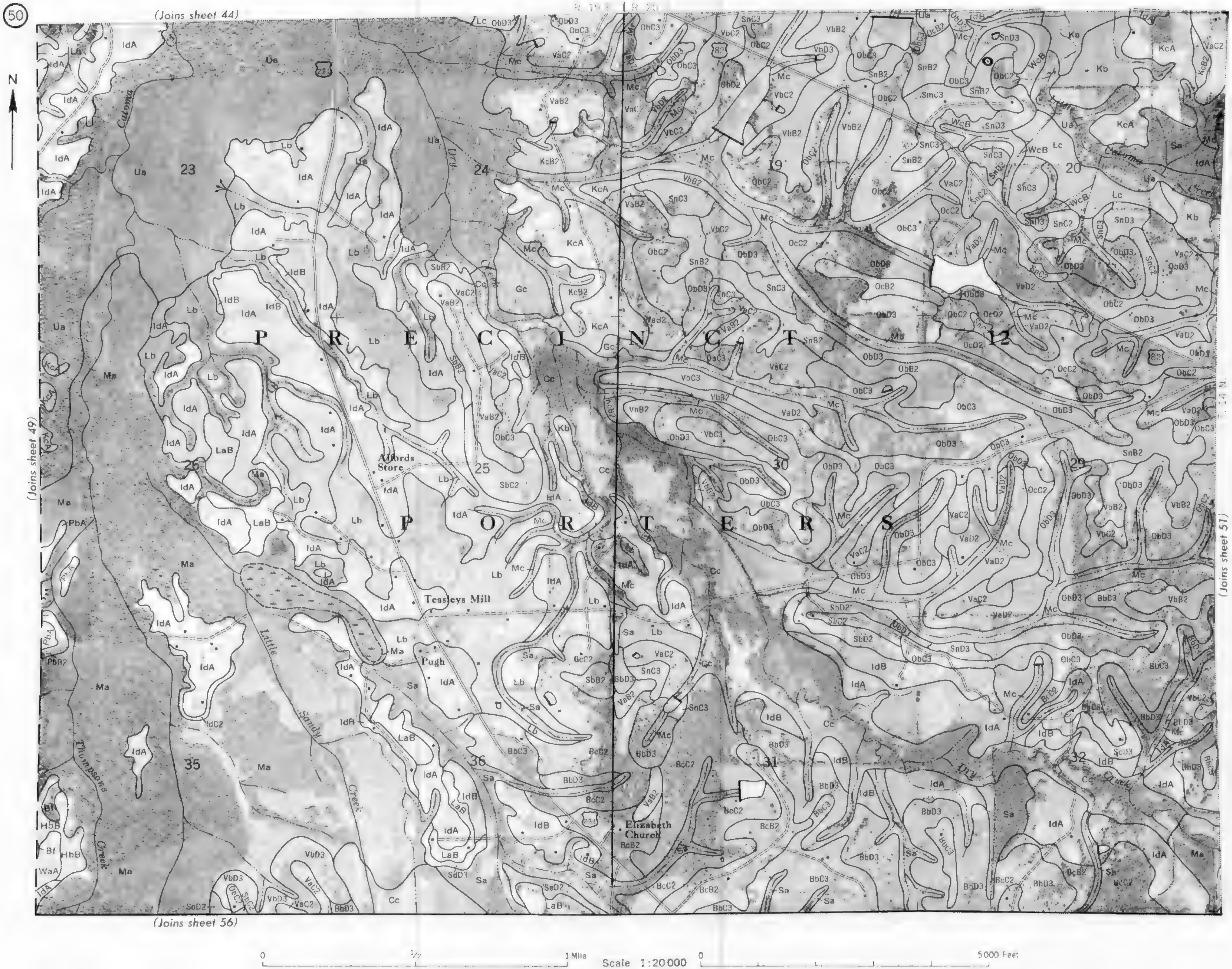


(Joins sheet 4)

(Joins sheet 6)

(Joins sheet 12)

0 ½ 1 Mile Scale 1:20000 0 5000 Feet


50
(Joins sheet 44)
(Joins sheet 49)
(Joins sheet 51)
(Joins sheet 56)
N
P R E C I N C T 12
P O R T E R S
Alfords Store
Teasleys Mill
Pugh
Elizabeth Church
Little Sandy Creek
Thompsons Creek
Catoma Creek
Dry Creek
23
24
19
20
26
25
30
29
35
36
31
32
Scale 1:20000
0
1/2
1 Mile
0
5000 Feet


R 20 E
(Joins sheet 45)
51
N
T 14 N
PRECINCT 12
PORTERS
Brier Hill School
Brier Hill Church
Downing
Little Catoma Creek
Dirt Creek
Dry
(Joins sheet 50)
(Joins sheet 57)
COUNTY
BULLOCK
0 1/2 1 Mile
Scale 1:20000
0 5000 Feet


52
(Joins sheet 46)
(Joins sheet 53)
(Joins sheet 58)
N
LOWNDES COUNTY
PRECINCT
UNION ACADEMY
Hill Church
Mt. Zion Church
Fleta
Scale 1:20 000
0 1/2 1 Mile
0 5000 Feet


(Joins sheet 47)
53
N
Sprague
Pintlalla Creek
Pintlalla Creek
P R E C I N C T 16
U N I O N A C A D E M Y
(Joins sheet 52)
(Joins sheet 54)
(Joins sheet 59)
ATLANTIC COAST LINE
0
1 Mile
Scale 1:20 000
0
Feet

(Joins sheet 48)

54

N

Sprague

Rumer

ATLANTIC

Creek

COAST

LINE

Ramer

Creek

White Cloud Church

Oak Wood School

P R E C I N C T 11

R O B E R T S O N C R O S S R O A D S

9 10 11 12 13 14 15 16

1 2 3 4

(Joins sheet 53)

(Joins sheet 55)

Joins sheet 60

0 ½ 1 Mile

Scale 1:20 000

0


(Joins sheet 49)
55
N
Davis Crossroads
PRECINCT 11
ROBERTS CROSSROADS
(Joins sheet 54)
(Joins sheet 56)
(Joins sheet 61)
0
1/2
1 Mile
Scale 1:20 000
0
5000 Feet

MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 56

(Joins sheet 50)

R 19 E | R. 20 E

56

N

PRECINCT 1

PORTERS

McNeal School

Little Sandy Creek

Mill Creek

Thompson Cr.

Bibb Creek

(Joins sheet 55)

(Joins sheet 57)

(Joins sheet 62)

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet


R. 20 E.
(Joins sheet 51)
Downing
57
N
COUNTY
PRECINCT 12
PORTERS
(Joins sheet 56)
Sandy Creek Cemetery
Rehoba Church
Rehoba School
Sandy Creek
BULLOCK
(Joins sheet 63)
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

58

(Joins sheet 52)

N

LOWNDES COUNTY

P R E C I N C T

U N I O N

A C A D E M Y

19 20 21 22

30 29 28 27

31 32 33 34

16

Devenport

Guys Village School

Rehobeth Church

Mt Carmel Church

Mount Carmel

Bethlehem

Mt Hill Missionary Ch

LOWNDES COUNTY

CRENSHAW COUNTY

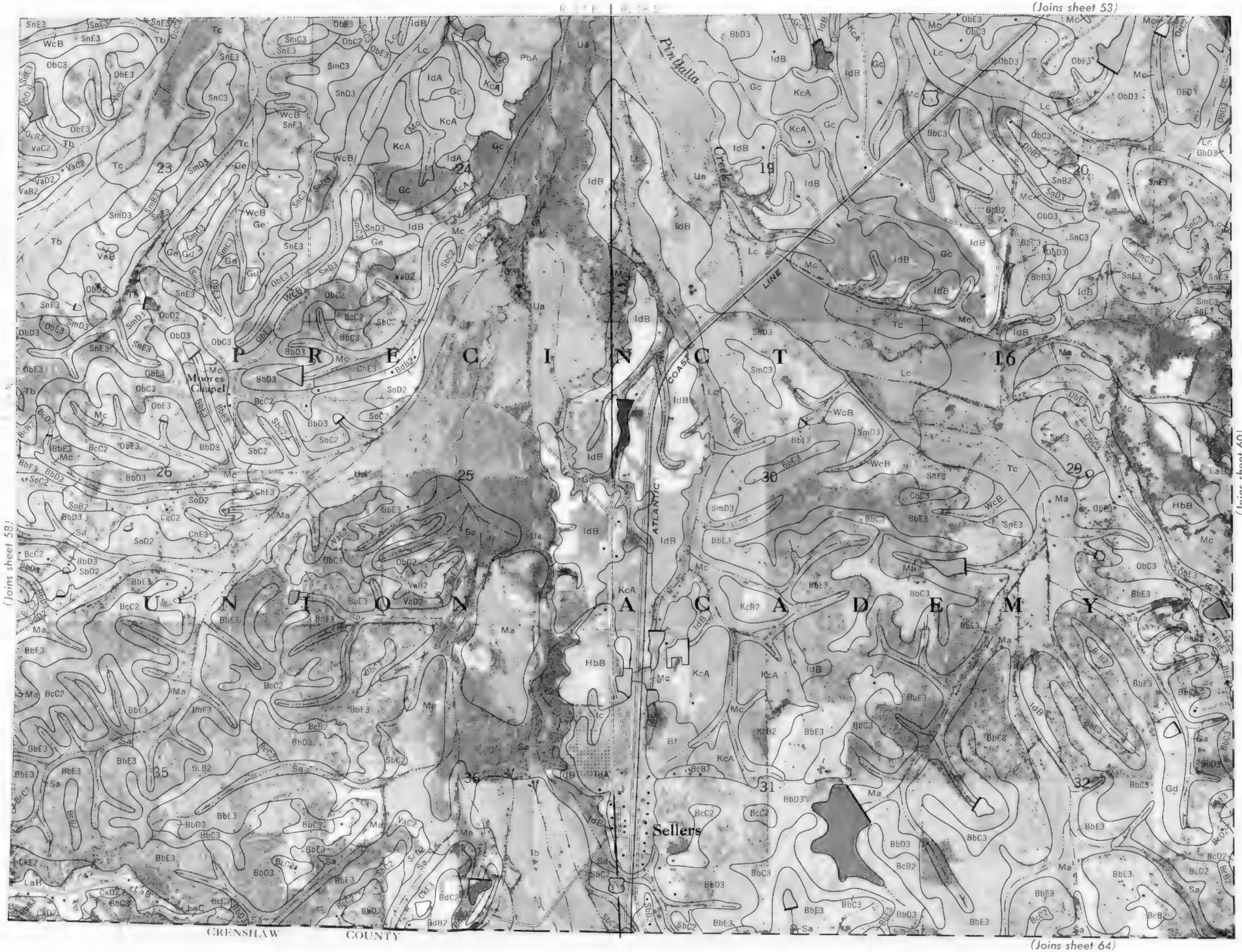
CRENSHAW COUNTY

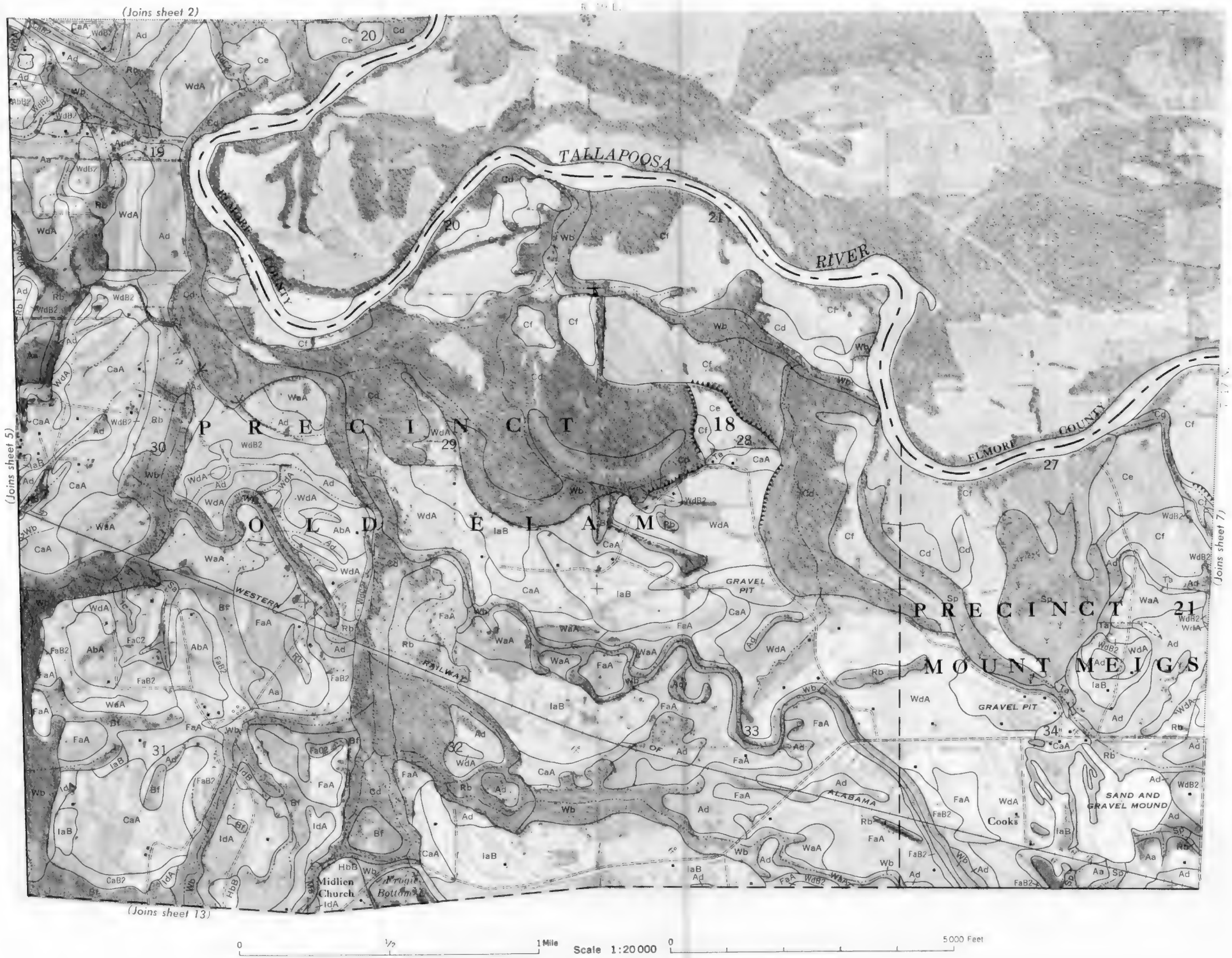
(Joins sheet 59)

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet


(Joins sheet 53)
59
N
(Joins sheet 60)
(Joins sheet 58)
Pintalla Creek
COAST LINE
ATLANTIC
Moores Chapel
Sellers
PRECINCT 5
PRECINCT 16
PRECINCT 19
PRECINCT 20
PRECINCT 23
PRECINCT 24
PRECINCT 25
PRECINCT 26
PRECINCT 29
PRECINCT 30
PRECINCT 31
PRECINCT 32
PRECINCT 35
PRECINCT 36
UNION ACADEMY
CRENSHAW COUNTY
(Joins sheet 64)
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet


6
N
(Joins sheet 2)
(Joins sheet 5)
(Joins sheet 7)
(Joins sheet 13)
TALLAPOOSA RIVER
ELMORE COUNTY
PRECINCT 18
OLD ELAM
PRECINCT 21
MOUNT MEIGS
WESTERN RAILWAY OF ALABAMA
GRAVEL PIT
GRAVEL PIT
SAND AND GRAVEL MOUND
Cooks
Midlien Church
Bruce Bottom
19
20
21
27
28
29
30
31
32
33
34
0
1/2
1 Mile
Scale 1:20000
0
5000 Feet

(60)

(Joins sheet 54)

N

(Joins sheet 59)

(Joins sheet 61)

(Joins sheet 65)

Lion Hill School

Little Zion Church

PRINCIPIO

DUCKERS

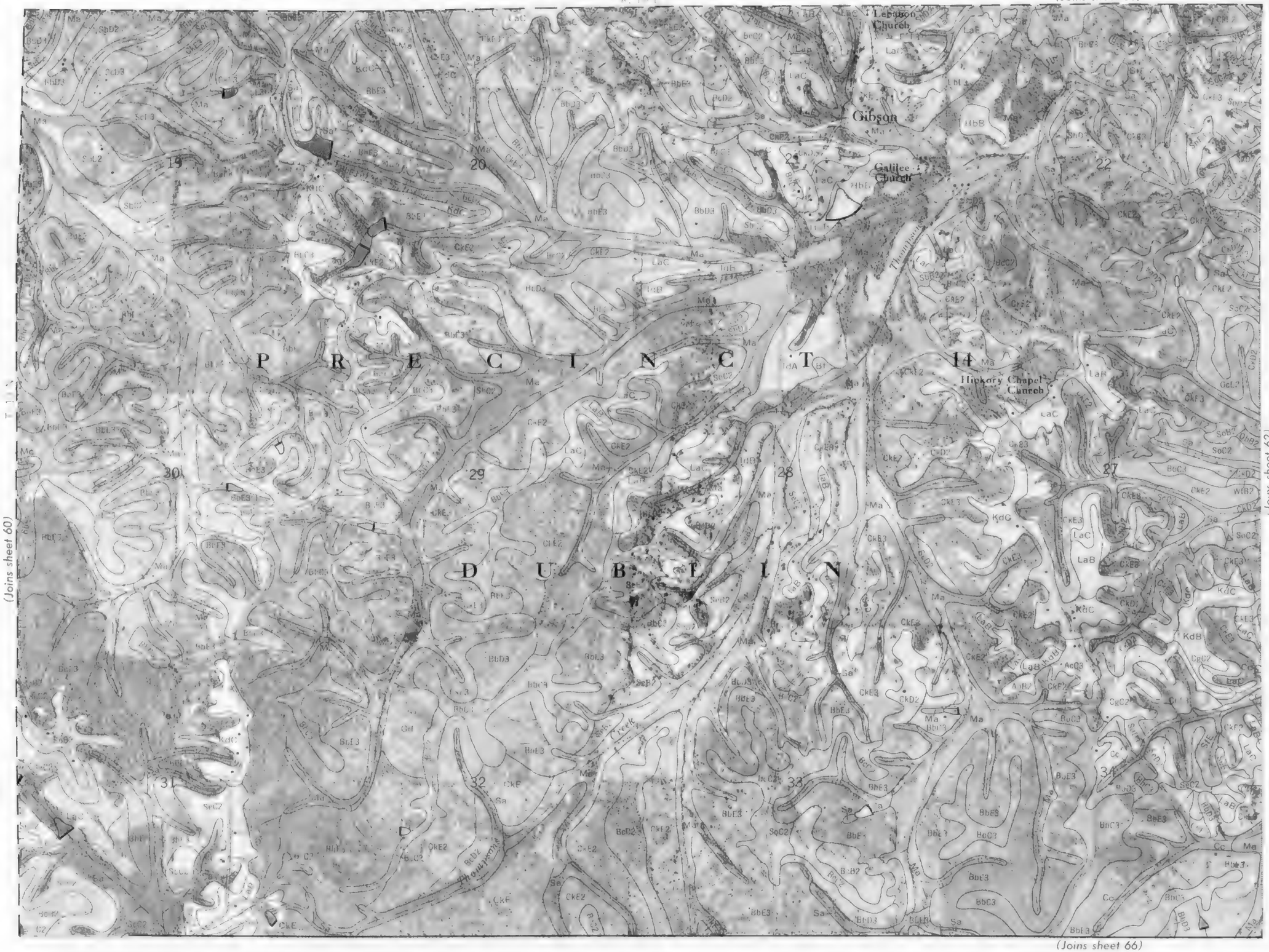
Rauter

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

(Joins sheet 55)



(Joins sheet 60)

(Joins sheet 62)

(Joins sheet 66)

0 ½ 1 Mile Scale 1:20000 0 5000 Feet

62

R. 19 E. | R. 20 E.

(Joins sheet 56)

N

(Joins sheet 61)

(Joins sheet 63)

(Joins sheet 67)

PRECINCT 14

DUBLIN PRECINCT 15

PINE LEVEL PRECINCT 16

Spring Hill Church

Buckhorn Mill Creek

0 ½ 1 Mile

Scale 1:20000

(Joins sheet 57)

(Joins sheet 62)

(Joins sheet 68)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

64

(Joins right below)

R. 18 E

N

T. 12 N

PRECINCT 15

PRECINCT TUCKERS

Strata School

Strata

Lapine School

New Hope Church

Lapine

Naftel

Pintlala Creek

Blue Creek

ATLANTIC COAST LINE

CRENSHAW COUNTY

(Joins sheet 69)

(Joins sheet 59)

(Joins sheet 65)

(Joins left above)

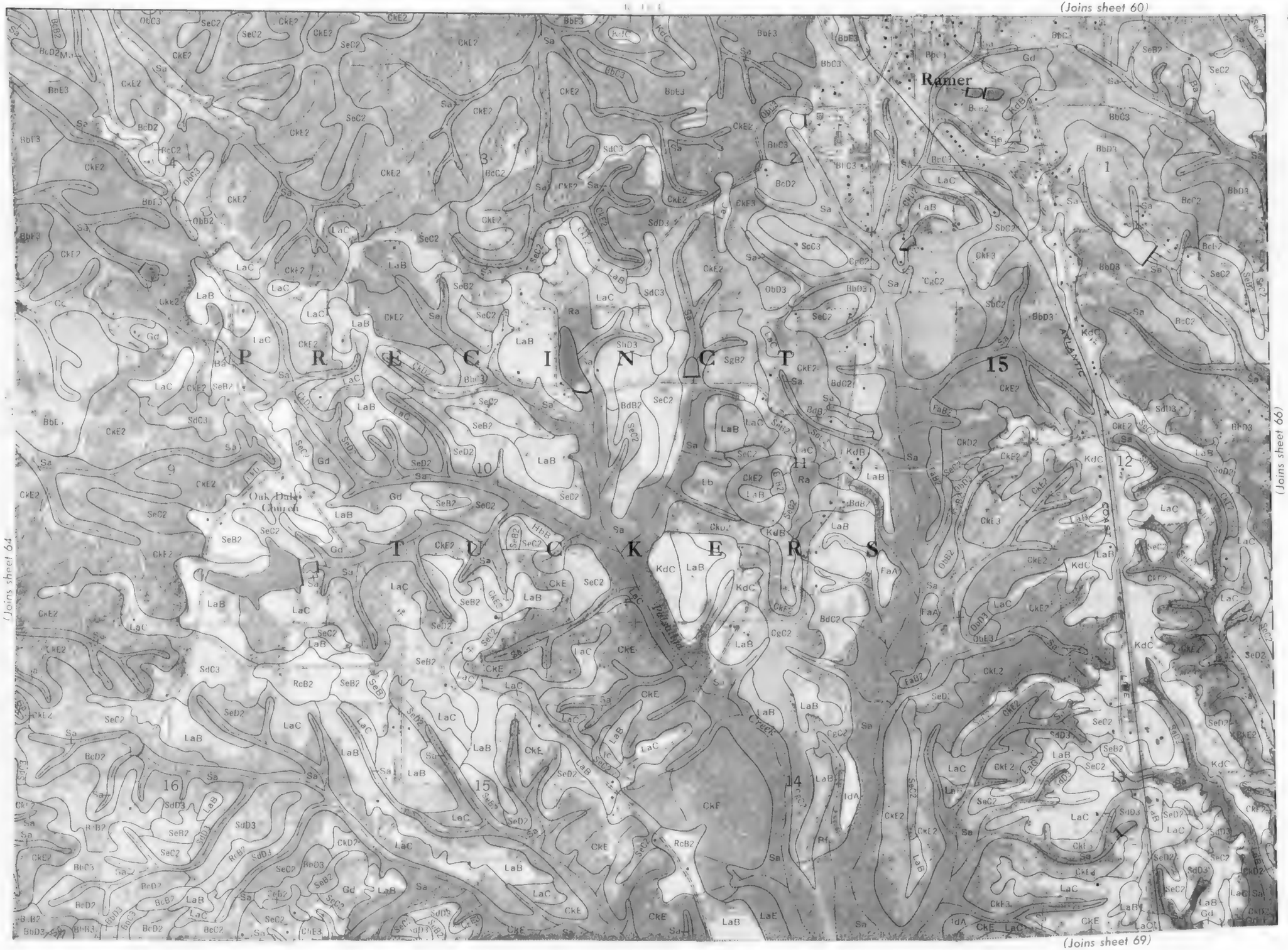
0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

(Joins sheet 60)

N



(Joins sheet 64)

(Joins sheet 66)

(Joins sheet 69)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

66

(Joins sheet 61)

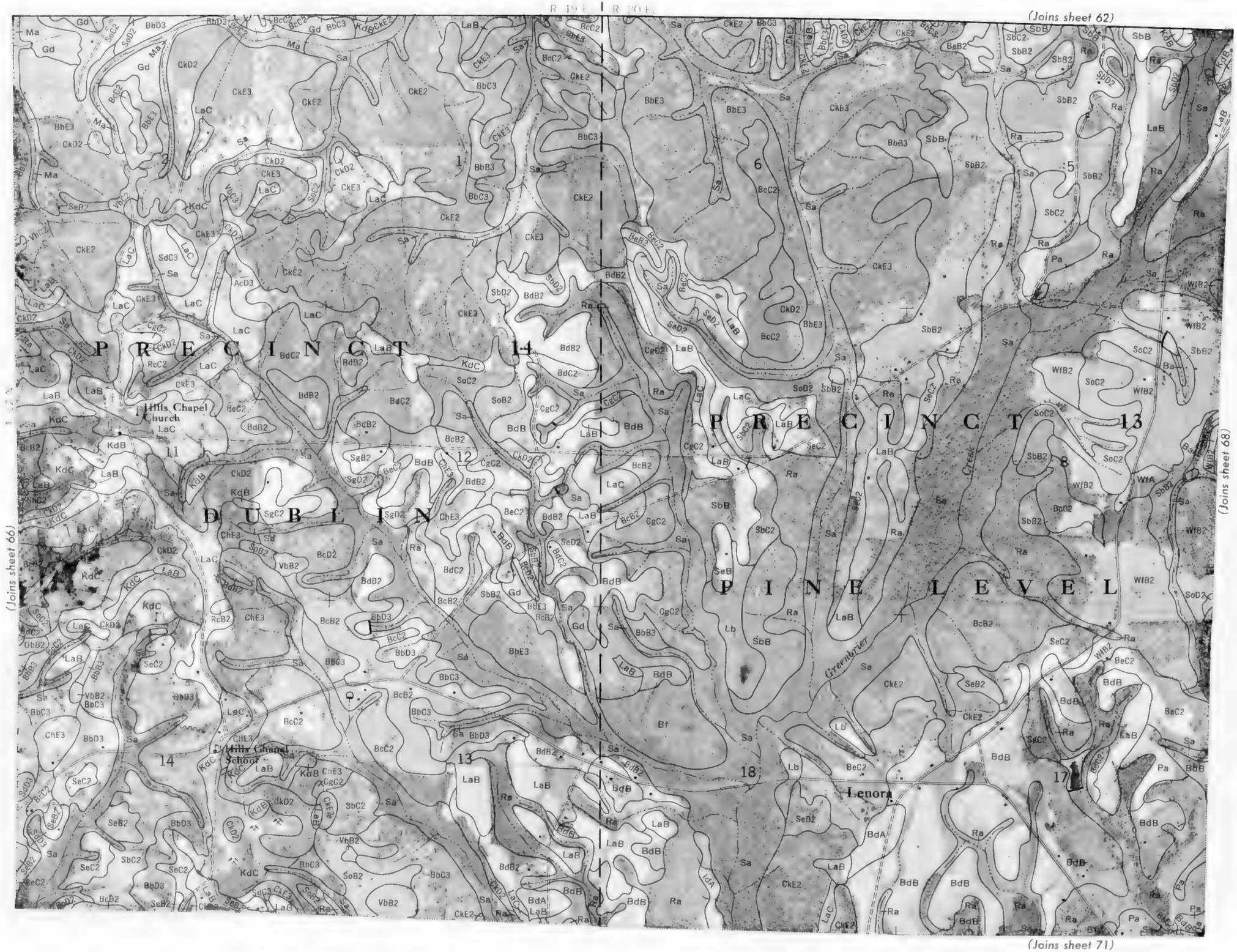
(Joins sheet 65)

(Joins sheet 70)

(Joins sheet 67)

1 Mile

Scale 1:20000


R 14 E
R 20 E
(Joins sheet 62)
67
N
(Joins sheet 66)
(Joins sheet 68)
(Joins sheet 71)
P R E C I N C T 14
D U B L I N
P R E C I N C T 13
P I N E L E V E L
Hills Chapel Church
Hills Chapel School
Lenora
Creek
Greenbrier
0
1/2
1 Mile
Scale 1:20 000
0
5 000 Feet

(68)

(Joins sheet 63)

N

(Joins sheet 67)

(Joins sheet 72)

1 Mile

Scale 1:20000

5000


R. 18 E.
(Joins sheet 65)
69
N
(Joins sheet 70)
(Joins inset, sheet 64)
Sardis Church
McCaulla School
PRECINCT
TUCKERS
Grad
CRENSHAW COUNTY
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

R 19 E | R 20 E

7

N

T. 17 N.

ELMORE COUNTY

TALLAPOOSA RIVER

ELMORE COUNTY

PRECINCT 21

MOUNTAIN MEIGS

GRAVEL PIT

Old Augusta School

26

25

30

31

32

35

36

Cd Ce Cf Gd Sp Wb WdA WdB2 Ad CaA Rb

(Joins sheet 6)

(Joins sheet 8)

(Joins sheet 14)

0 ½ 1 Mile

Scale 1:20000

0 5000 feet

R. 12 E

(Joins sheet 66)

N

Friendship Church

Mill Creek

Weuse Creek

PRECINCT 1

DILLINGHAM PRECINCT

ATLANTIC COAST LINE

Weuse Creek

Mill Creek

CRENSHAW CO | PIKE COUNTY

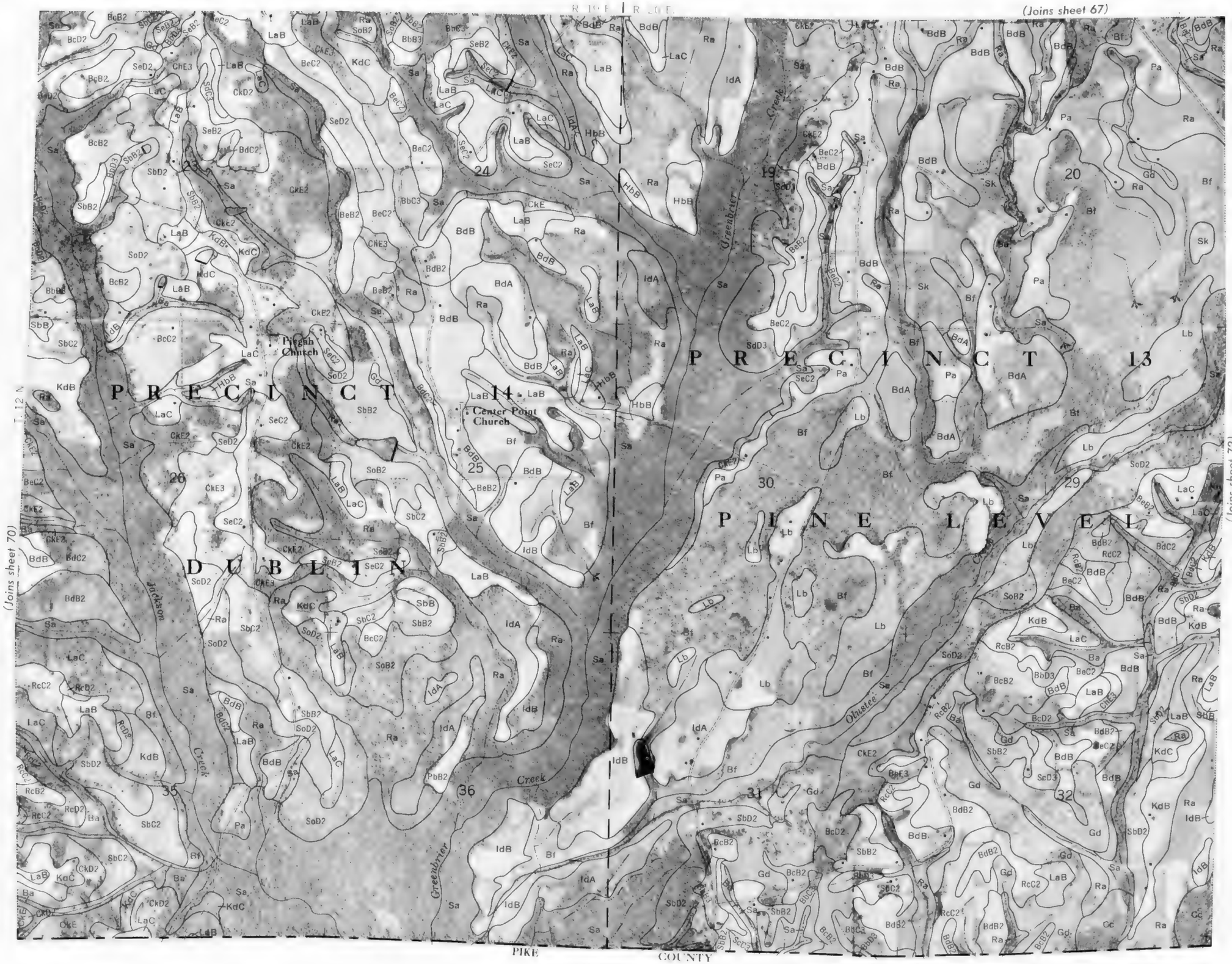
(Joins sheet 69)

(Joins sheet 71)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet


RIDGE RGE.
(Joins sheet 67)
71
N
(Joins sheet 72)
(Joins sheet 70)
PRECINCT 14
PRECINCT 13
DUBLIN
PINE LEVEL
Pisgah Church
Center Point Church
Jackson Creek
Greenbrier Creek
Obustee Creek
PIKE COUNTY
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

72

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet

MONTGOMERY COUNTY, ALABAMA - SHEET NUMBER 8

(8)

N

R. 20 E.

T. 17 N.

PRECINCT 21

MOUNT MEIGS

TALLAPOOSA RIVER

ELMORE COUNTY

MACON LINE

MACON COUNTY

CREEK

Cf Ce Ad Rb Ka Cc WdA Wb WdB2 We Sa Cd

26 27 34 35 36 33

(Joins sheet 7)

(Joins sheet 15)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1954.

Range, township, and section corners shown on this map are indefinite.

0 1/2 1 Mile Scale 1:20000 0 5000 Feet

(Joins sheet 16)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

MONTGOMERY COUNTY, ALABAMA

ALABAMA AGRICULTURAL EXPERIMENT STATION
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter A, B, C, D, or E shows the slope. Symbols without a slope letter are those of nearly level soils, or of land types, such as Terrace escarpments, that have a range of slope. Soils that are named as eroded have a final number, 2 or 3 in their symbol.

SYMBOL	NAME
Aa	Altavista very fine sandy loam
AbA	Amite fine sandy loam, level phase
AbB2	Amite fine sandy loam, eroded very gently sloping phase
AbC2	Amite fine sandy loam, eroded gently sloping phase
AbD2	Amite fine sandy loam, eroded sloping phase
AcC3	Amite sandy clay loam, severely eroded gently sloping phase
AcD3	Amite sandy clay loam, severely eroded sloping phase
AcE3	Amite sandy clay loam, severely eroded strongly sloping phase
Ad	Augusta silt loam and fine sandy loam
Ba	Bibb soils, local alluvium phases
BbB3	Boswell clay loam, severely eroded nearly level phase
BbC3	Boswell clay loam, severely eroded very gently sloping phase
BbD3	Boswell clay loam, severely eroded gently sloping phase
BbE3	Boswell clay loam, severely eroded, 8-20 percent slopes
BcB2	Boswell fine sandy loam, eroded nearly level phase
BcC2	Boswell fine sandy loam, eroded very gently sloping phase
BcD2	Boswell fine sandy loam, eroded gently sloping phase
BdA	Bowie fine sandy loam, level phase
BdB	Bowie fine sandy loam, very gently sloping phase
BdB2	Bowie fine sandy loam, eroded very gently sloping phase
BdC2	Bowie fine sandy loam, eroded gently sloping phase
BeB2	Bowie fine sandy loam, eroded very gently sloping thin solum phase
BeC2	Bowie fine sandy loam, eroded gently sloping thin solum phase
Bf	Byars and Myatt soils
CaA	Cahaba fine sandy loam, level phase
CaB2	Cahaba fine sandy loam, eroded very gently sloping phase
CaC2	Cahaba fine sandy loam, eroded gently sloping phase
Cb	Catalpa clay
Cc	Chastain soils
Cd	Chewacla silt loam
Ce	Congaree fine sandy loam
Cf	Congaree silt loam
CgC2	Cuthbert fine sandy loam, eroded gently sloping phase
ChE3	Cuthbert soils, severely eroded, 8-30 percent slopes
CkD2	Cuthbert, Lakeland, and Boswell soils, eroded, 2-12 percent slopes
CkE	Cuthbert, Lakeland, and Boswell soils, 12-30 percent slopes
CkE2	Cuthbert, Lakeland, and Boswell soils, eroded, 12-30 percent slopes
CkE3	Cuthbert, Lakeland, and Boswell soils, severely eroded, 12-30 percent slopes
Ea	Eutaw clay
Eb	Eutaw fine sandy loam
FaA	Flint fine sandy loam, level phase
FaB2	Flint fine sandy loam, eroded very gently sloping phase
FaC2	Flint fine sandy loam, eroded gently sloping phase
Ga	Geiger silty clay
Gb	Geiger silty clay, overwash variant
Gc	Geiger very fine sandy loam
Gd	Gullied land, acid materials
Ge	Gullied land, calcareous materials
HaB2	Houston clay, eroded nearly level phase
HbB	Huckabee loamy sand, 0-5 percent slopes
IaB	Independence loamy sand, 0-5 percent slopes
Ib	Iuka soils
Ic	Iuka soils, local alluvium phases
IdA	Izagora fine sandy loam, level phase
IdB	Izagora fine sandy loam, very gently sloping phase
IdC2	Izagora fine sandy loam, eroded gently sloping phase
Ka	Kaufman clay loam
Kb	Kipling silty clay
KcA	Kipling very fine sandy loam, level phase
KcB2	Kipling very fine sandy loam, eroded nearly level phase
KdB	Klej loamy fine sand, compact substratum, 0-5 percent slopes
KdC	Klej loamy fine sand, compact substratum, 5-12 percent slopes
LaB	Lakeland loamy fine sand, 0-5 percent slopes
LaC	Lakeland loamy fine sand, 5-12 percent slopes
LaE	Lakeland loamy fine sand, 12-20 percent slopes
Lb	Leaf fine sandy loam
Lc	Leeper silty clay
Ma	Mantachie soils
Mb	Mixed alluvial land
Mc	Mixed local alluvial land
Oa	Ochlockonee silt loam
ObB2	Oktibbeha clay, eroded nearly level phase
ObC2	Oktibbeha clay, eroded very gently sloping phase
ObC3	Oktibbeha clay, severely eroded very gently sloping phase
ObD2	Oktibbeha clay, eroded gently sloping phase
ObD3	Oktibbeha clay, severely eroded gently sloping phase
ObE3	Oktibbeha clay, severely eroded, 8-20 percent slopes
OcB2	Oktibbeha fine sandy loam, eroded nearly level phase
OcC2	Oktibbeha fine sandy loam, eroded very gently sloping phase
OcD2	Oktibbeha fine sandy loam, eroded gently sloping phase
OcE2	Oktibbeha fine sandy loam, eroded sloping phase
Pa	Pheba very fine sandy loam
PbA	Prentiss very fine sandy loam, level phase
PbB2	Prentiss very fine sandy loam, eroded very gently sloping phase
Ra	Rains fine sandy loam
Rb	Roanoke silt loam
RcB2	Ruston fine sandy loam, eroded very gently sloping phase
RcC2	Ruston fine sandy loam, eroded gently sloping phase
RcD2	Ruston fine sandy loam, eroded sloping phase
Sa	Sandy alluvial land, somewhat poorly drained
SbB	Sawyer fine sandy loam, very gently sloping phase
SbB2	Sawyer fine sandy loam, eroded very gently sloping phase
SbC2	Sawyer fine sandy loam, eroded gently sloping phase
SbD2	Sawyer fine sandy loam, eroded sloping phase
ScC3	Sawyer sandy clay loam, severely eroded gently sloping phase
ScD3	Sawyer sandy clay loam, severely eroded sloping phase
SdC3	Shubuta sandy clay loam, severely eroded gently sloping phase
SdD3	Shubuta sandy clay loam, severely eroded sloping phase
SeB	Shubuta very fine sandy loam, very gently sloping phase
SeB2	Shubuta very fine sandy loam, eroded very gently sloping phase
SeC2	Shubuta very fine sandy loam, eroded gently sloping phase
SeD2	Shubuta very fine sandy loam, eroded sloping phase
SfE	Shubuta-Cuthbert complex, eroded, 12-30 percent slopes
SgB2	Shubuta-Cuthbert fine sandy loams, eroded very gently sloping phases
SgC2	Shubuta-Cuthbert fine sandy loams, eroded gently sloping phases
SgD2	Shubuta-Cuthbert fine sandy loams, eroded sloping phases
ShC3	Shubuta-Cuthbert sandy clay loams, severely eroded gently sloping phases
ShD3	Shubuta-Cuthbert sandy clay loams, severely eroded sloping phases
Sk	Stough fine sandy loam
SmB2	Sumter clay, eroded nearly level phase
SmB3	Sumter clay, severely eroded nearly level phase
SmC2	Sumter clay, eroded very gently sloping phase
SmC3	Sumter clay, severely eroded very gently sloping phase
SmD2	Sumter clay, eroded gently sloping phase
SmD3	Sumter clay, severely eroded gently sloping phase
SnB2	Sumter-Oktibbeha-Vaiden clays, eroded nearly level phases
SnC2	Sumter-Oktibbeha-Vaiden clays, eroded very gently sloping phases
SnC3	Sumter-Oktibbeha-Vaiden clays, severely eroded very gently sloping phases
SnD2	Sumter-Oktibbeha-Vaiden clays, eroded gently sloping phases
SnD3	Sumter-Oktibbeha-Vaiden clays, severely eroded gently sloping phases
SnE3	Sumter-Oktibbeha-Vaiden clays, severely eroded sloping phases
SoB2	Susquehanna fine sandy loam, eroded nearly level phase
SoC2	Susquehanna fine sandy loam, eroded very gently sloping phase
SoD2	Susquehanna fine sandy loam, eroded, 5-12 percent slopes
Sp	Swamp
Ta	Terrace escarpments
Tb	Tuscumbia fine sandy loam
Tc	Tuscumbia silty clay
Ua	Una clay
VaA	Vaiden fine sandy loam, level phase
VaB	Vaiden fine sandy loam, nearly level phase
VaB2	Vaiden fine sandy loam, eroded nearly level phase
VaC2	Vaiden fine sandy loam, eroded very gently sloping phase
VaD2	Vaiden fine sandy loam, eroded gently sloping phase
VaE2	Vaiden fine sandy loam, eroded sloping phase
VbA	Vaiden silty clay, level phase
VbB	Vaiden silty clay, nearly level phase
VbB2	Vaiden silty clay, eroded nearly level phase
VbC2	Vaiden silty clay, eroded very gently sloping phase
VbC3	Vaiden silty clay, severely eroded very gently sloping phase
VbD2	Vaiden silty clay, eroded gently sloping phase
VbD3	Vaiden silty clay, severely eroded gently sloping phase
WaA	Waugh fine sandy loam, level phase
WaB2	Waugh fine sandy loam, eroded very gently sloping phase
Wb	Wehadkee silt loam
WcA	West Point clay, level phase
WcB	West Point clay, nearly level phase
WdA	Wickham fine sandy loam, level phase
WdB2	Wickham fine sandy loam, eroded very gently sloping phase
WdC2	Wickham fine sandy loam, eroded gently sloping phase
We	Wickham silt loam
WfA	Wilcox clay loam, level phase
WfB2	Wilcox clay loam, eroded nearly level phase

Soils surveyed 1939-57 by Leland H. Burgess, C. S. Wilson, E. H. McBride, J. L. Anderson, and K. E. Dahms, Soil Conservation Service. Correlation by I. L. Martin, Soil Conservation Service.

Soil map constructed 1959 by Cartographic Division, Soil Conservation Service, USDA, from 1954 aerial photographs. Controlled mosaic based on Alabama plane coordinate system, east zone, transverse Mercator projection, 1927 North American datum.

MONTGOMERY COUNTY, ALABAMA

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Roads

- Good motor
- Poor motor
- Trail
- Marker, U. S. 33

Railroads

- Single track
- Multiple track
- Abandoned

Bridges and crossings

- Road
- Trail, foot
- Railroad
- Ferry
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

Buildings

- School
- Church
- Station

Mine and Quarry

- Shaft
- Dump
- Prospect

Pits, gravel or other

Power line

Pipeline

Cemetery

Dam

Levee

Tank

Oil well

Windmill

Canal lock (point upstream)

BOUNDARIES

- National or state
- County
- Township, civil
- Township, U. S.
- Section line, corner
- City (corporate)
- Reservation
- Land grant

DRAINAGE

Streams

- Perennial
- Intermittent, unclass.
- Crossable with tillage implements
- Not crossable with tillage implements

Canals and ditches — CANAL / DITCH

Lakes and ponds

- Perennial
- Intermittent

Wells — flowing

Springs

Marsh

Wet spot

RELIEF

Escarpments

- Bedrock
- Other

Prominent peaks

Depressions

	Large	Small
Crossable with tillage implements		
Not crossable with tillage implements		
Contains water most of the time		

SOIL SURVEY DATA

- Soil type outline and symbol — Dx
- Gravel
- Stones
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land

Erosion

- Wind, moderate
- Wind, severe
- Blowout
- Wind hummock
- Overblown soil

Gullies

Areas of alkali and salts

- Strong — A
- Moderate — M
- Slight — S

Free of toxic effect — F

Sample location — • 26

Saline spot